Cisco Active Network Abstraction VNE Reference Guide, Version 3.6 SP1

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Preface

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Purpose of Guide

This Reference Guide lists supported devices and technologies per VNE in Cisco Active Network Abstraction (Cisco ANA), version 3.6 SP1.

Note This Guide contains a subset of the total list of VNEs supported by this version of Cisco ANA. For information about additional supported VNEs, please contact Cisco Professional Services.

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

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Introduction

This chapter introduces Virtual Network Elements (VNEs) and describes the types of information available in this Guide. It includes the following sections:

Introduction to VNEs

VNEs (Virtual Network Elements) are independent software processes that run on the Cisco ANA Unit Servers. Each VNE is assigned to manage a single network element (NE) using the NE's management interfaces (for example, SNMP and/or Telnet). The VNEs maintain a live model, or abstraction, of each NE and the entire network.

As the VNE loads, it starts investigating the NE and automatically builds a live model of the NE, including its physical and logical inventory, its configuration and its status. After modeling the NE, the VNE begins negotiating with peer VNEs, which represent the peer NEs, in order to determine NE connectivity and topology at different layers. This model of the network topology, NE state, and NE inventory is constantly being updated by the VNEs, which track every change that occurs in the NEs and the network.

The VNEs communicate between themselves to analyze end-to-end flows, which provide information for root-cause and impact analysis, service path tracing, and more.

Understanding the Tables

The following legends describe key information that can be found in the VNE support information chapters in this Guide:

Certification Level Legend

Table 1 describes the meaning of the certification levels found in the VNE support information tables in this Reference Guide.

Table 1 Certification Level Legend

Certification Level	Description
N	Not supported.
S	Supported.
V	Verified.

Expedite Legend

Table 2 describes the meaning of the Expedite column found in the service event (service alarm) tables in this Reference Guide.

Table 2 Expedite Legend in Service Event Tables

Value	Description
Y	The service event is expedited by a syslog or trap generated by the device. This means that the syslog or trap causes the VNE to poll the device without waiting for the usual polling cycle, thus enabling quicker detection of the event.
N	The service event is not expedited. This means that the VNE will detect this event during the next regularly scheduled polling cycle.

Overview—Supported Network Elements in Cisco ANA 3.6 SP1

This chapter provides an overview of network elements (NEs) that are supported by Cisco ANA 3.6 SP1 and includes the following sections:

Supported Alcatel-Lucent Devices in Cisco ANA 3.6 SP1

This document includes support information for the following Alcatel-Lucent devices:

Table 3 lists the Alcatel-Lucent NE types that are supported in Cisco ANA 3.6 SP1.

Table 3 Supported Alcatel-Lucent Devices in Cisco ANA 3.6 SP1

Device Series	NE Type	SysOID	Certification Level
Alcatel-Lucent 7302 Intelligent Services Access Manager (ISAM) DSLAMs	ISAM 7302	1.3.6.1.4.1.637.61.1	V
Alcatel-Lucent 7450 Ethernet Service Switch	ess-7450	1.3.6.1.4.1.6527.1.6.1	V
	ess-7450	1.3.6.1.4.1.6527.1.6.3	V
Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches	cbx500	.1.3.6.1.4.1.277.1	S
	gx550	.1.3.6.1.4.1.277.1	S
	B-STDX 9000	.1.3.6.1.4.1.277.1	S

Supported Cisco Gateways in Cisco ANA 3.6 SP1

Table 4 lists the Cisco gateways that are supported in Cisco ANA 3.6 SP1.

Table 4 Supported Cisco Gateways in Cisco ANA 3.6 SP1

Device Series	NE Type	SysOID	Certification Level
Cisco AS5300 Series Universal Gateways	ciscoAS5300	1.3.6.1.4.1.9.1.162	S

Supported Cisco Routers in Cisco ANA 3.6 SP1

This document includes support information for the following Cisco routers:

Table 5 lists the Cisco router NE types that are supported in Cisco ANA 3.6 SP1.

Table 5 Supported Cisco Routers in Cisco ANA 3.6 SP1

Device Series	NE Type	SysOID	Certification Level
Cisco 800 Series Routers	801	1.3.6.1.4.1.9.1.212	S
	802	1.3.6.1.4.1.9.1.213	S
	803	1.3.6.1.4.1.9.1.214	S
	804	1.3.6.1.4.1.9.1.215	S
	805	1.3.6.1.4.1.9.1.245	S
	806	1.3.6.1.4.1.9.1.384	S
	811	1.3.6.1.4.1.9.1.395	S
	813	1.3.6.1.4.1.9.1.396	S
	826	1.3.6.1.4.1.9.1.322	S
	827	1.3.6.1.4.1.9.1.284	S
	827H1	1.3.6.1.4.1.9.1.446	S
	827QuadV1	1.3.6.1.4.1.9.1.270	S
	828	1.3.6.1.4.1.9.1.382	S
	831	1.3.6.1.4.1.9.1.497	S
	836	1.3.6.1.4.1.9.1.499	S
	837	1.3.6.1.4.1.9.1.495	S
	877W	1.3.6.1.4.1.9.1.569	S
Cisco 1000 Series Routers	cisco1003	1.3.6.1.4.1.9.1.41	S
	cisco1004	1.3.6.1.4.1.9.1.44	S
Cisco 1600 Series Routers	cisco1601	.1.3.6.1.4.1.9.1.113	S
	cisco1602	.1.3.6.1.4.1.9.1.114	S
	cisco1603	.1.3.6.1.4.1.9.1.115	S
	cisco1604	.1.3.6.1.4.1.9.1.116	S
	ciscoPro1601	.1.3.6.1.4.1.9.1.117	S
	ciscoPro1602	.1.3.6.1.4.1.9.1.118	S
	ciscoPro1603	.1.3.6.1.4.1.9.1.119	S

Table 5 Supported Cisco Routers in Cisco ANA 3.6 SP1 (continued)

Device Series	NE Type	SysOID	Certification Level
Cisco 1700 Series Modular Access Routers	cisco1701ADSLBRI	1.3.6.1.4.1.9.1.550	S
	cisco1710	1.3.6.1.4.1.9.1.200	S
	cisco1711	1.3.6.1.4.1.9.1.538	S
	cisco1712	1.3.6.1.4.1.9.1.539	S
	cisco1720	1.3.6.1.4.1.9.1.201	S
	cisco1721	1.3.6.1.4.1.9.1.444	V
	cisco1750	1.3.6.1.4.1.9.1.216	S
	cisco1751(V)	1.3.6.1.4.1.9.1.326	S
	cisco1760(V)	1.3.6.1.4.1.9.1.416	S
	cisco1751	1.3.6.1.4.1.9.1.326	S
Cisco 1800 Series Integrated Services Routers	cisco1801	1.3.6.1.4.1.9.1.638	S
	cisco1802	1.3.6.1.4.1.9.1.639	S
	cisco1803	1.3.6.1.4.1.9.1.640	S
	cisco1811	1.3.6.1.4.1.9.1.641	S
	cisco1812	1.3.6.1.4.1.9.1.642	S
	cisco1841	1.3.6.1.4.1.9.1.620	S

Table 5 Supported Cisco Routers in Cisco ANA 3.6 SP1 (continued)

Device Series	NE Type	SysOID	Certification Level
Cisco 2500 Series Routers	cisco2500	1.3.6.1.4.1.9.1.13	S
	cisco2501	1.3.6.1.4.1.9.1.17	S
	cisco2501FRADFX	1.3.6.1.4.1.9.1.165	S
	cisco2501LANFRADFX	1.3.6.1.4.1.9.1.166	S
	cisco2502	1.3.6.1.4.1.9.1.18	S
	cisco2502LANFRADFX	1.3.6.1.4.1.9.1.167	S
	cisco2503	1.3.6.1.4.1.9.1.19	S
	cisco2504	1.3.6.1.4.1.9.1.20	S
	cisco2505	1.3.6.1.4.1.9.1.21	S
	cisco2506	1.3.6.1.4.1.9.1.22	S
	cisco2507	1.3.6.1.4.1.9.1.23	S
	cisco2508	1.3.6.1.4.1.9.1.24	S
	cisco2509	1.3.6.1.4.1.9.1.25	S
	cisco2510	1.3.6.1.4.1.9.1.26	S
	cisco2511	1.3.6.1.4.1.9.1.27	S
	cisco2512	1.3.6.1.4.1.9.1.28	S
	cisco2513	1.3.6.1.4.1.9.1.29	S
	cisco2514	1.3.6.1.4.1.9.1.30	S
	cisco2515	1.3.6.1.4.1.9.1.31	S
	cisco2516	1.3.6.1.4.1.9.1.42	S
	cisco2517	1.3.6.1.4.1.9.1.67	S
	cisco2518	1.3.6.1.4.1.9.1.68	S
	cisco2519	1.3.6.1.4.1.9.1.69	S
	cisco2520	1.3.6.1.4.1.9.1.70	S
	cisco2521	1.3.6.1.4.1.9.1.71	S
	cisco2522	1.3.6.1.4.1.9.1.72	S
	cisco2523	1.3.6.1.4.1.9.1.73	S
	cisco2524	1.3.6.1.4.1.9.1.74	S
	cisco2525	1.3.6.1.4.1.9.1.75	S

Table 5 Supported Cisco Routers in Cisco ANA 3.6 SP1 (continued)

Device Series	NE Type	SysOID	Certification Level
Cisco 2600 Series Multiservice Platform Routers	cisco2610	1.3.6.1.4.1.9.1.185	S
	cisco2610XM	1.3.6.1.4.1.9.1.466	S
	2610XM-DC	1.3.6.1.4.1.9.1.466	S
	2610XM-RP5	1.3.6.1.4.1.9.1.466	S
	cisco2611	1.3.6.1.4.1.9.1.186	S
	cisco2611XM	1.3.6.1.4.1.9.1.467	S
	2611XM-DC	1.3.6.1.4.1.9.1.467	S
	2611XM-RP5	1.3.6.1.4.1.9.1.467	S
	cisco2612	1.3.6.1.4.1.9.1.187	S
	cisco2613	1.3.6.1.4.1.9.1.195	S
	cisco2620	1.3.6.1.4.1.9.1.208	S
	cisco2620XM	1.3.6.1.4.1.9.1.468	S
	cisco2620XM-DC	1.3.6.1.4.1.9.1.468	S
	cisco2620XM-RP5	1.3.6.1.4.1.9.1.468	S
	cisco2621	1.3.6.1.4.1.9.1.209	S
	cisco2621XM	1.3.6.1.4.1.9.1.469	S
	cisco2621XM-DC	1.3.6.1.4.1.9.1.469	S
	cisco2621XM-RP5	1.3.6.1.4.1.9.1.469	S
	cisco2650	1.3.6.1.4.1.9.1.319	S
	cisco2650XM	1.3.6.1.4.1.9.1.470	S
	cisco2650XM-DC	1.3.6.1.4.1.9.1.470	S
	cisco2650XM-RP5	1.3.6.1.4.1.9.1.470	S
	cisco2651	1.3.6.1.4.1.9.1.320	S
	cisco2651XM	1.3.6.1.4.1.9.1.471	S
	cisco2651XM-DC	1.3.6.1.4.1.9.1.471	S
	cisco2651XM-RP5	1.3.6.1.4.1.9.1.471	S
	cisco2691	1.3.6.1.4.1.9.1.413	S
	cisco2610M	1.3.6.1.4.1.9.1.418	S
Cisco 2800 Series Integrated Services Routers	2801	1.3.6.1.4.1.9.1.619	S
	2811	1.3.6.1.4.1.9.1.576	S
	2821	1.3.6.1.4.1.9.1.577	V
	2851	1.3.6.1.4.1.9.1.578	S
	2801 ADSL/K9	1.3.6.1.4.1.9.1.619	S

Table 5 Supported Cisco Routers in Cisco ANA 3.6 SP1 (continued)

Device Series	NE Type	SysOID	Certification Level
Cisco 3600 Series Multiservice Platform Routers	cisco3620	1.3.6.1.4.1.9.1.122	S
	cisco3640	1.3.6.1.4.1.9.1.110	S
	cisco3660	1.3.6.1.4.1.9.1.205	S
	cisco3661Ac	1.3.6.1.4.1.9.1.338	S
	cisco3661Dc	1.3.6.1.4.1.9.1.339	S
	cisco3662Ac	1.3.6.1.4.1.9.1.340	S
	cisco3662AcCo	1.3.6.1.4.1.9.1.342	S
	cisco3662Dc	1.3.6.1.4.1.9.1.341	S
	cisco3662DcCo	1.3.6.1.4.1.9.1.343	S
	ciscoSC3640	1.3.6.1.4.1.9.1.189	S
Cisco 3700 Series Multiservice Access Routers	cisco3725	1.3.6.1.4.1.9.1.414	S
	cisco3745	1.3.6.1.4.1.9.1.436	S
Cisco 7200 Series Routers	cisco7202	1.3.6.1.4.1.9.1.194	V
	cisco7206	1.3.6.1.4.1.9.1.108	V
	cisco7204	1.3.6.1.4.1.9.1.125	V
	cisco7204VXR	1.3.6.1.4.1.9.1.223	V
	cisco7206VXR	1.3.6.1.4.1.9.1.222	V
Cisco 7400 Series Routers	cisco7401ASR	1.3.6.1.4.1.9.1.403	S
Cisco 7600 Series Routers	cisco7604	1.3.6.1.4.1.9.1.658	V
	cisco7606	1.3.6.1.4.1.9.1.402	V
	cisco7609	1.3.6.1.4.1.9.1.509	V
	cisco7613	1.3.6.1.4.1.9.1.528	V
	cisco7604sysID	1.3.6.1.4.1.9.5.63	V
	ciscoOSR7603	1.3.6.1.4.1.9.1.401	S
	cisco7603S	1.3.6.1.4.1.9.1.862	S
	cisco7606S	1.3.6.1.4.1.9.1.863	S
	cisco7609S	1.3.6.1.4.1.9.1.864	S
	cisco7609S	1.3.6.1.4.1.9.1.835	S
	cisco7603sysID	1.3.6.1.4.1.9.5.53	S
	cisco7606sysID	1.3.6.1.4.1.9.5.54	S
	cisco7609sysID	1.3.6.1.4.1.9.5.55	S
	cisco7613sysID	1.3.6.1.4.1.9.5.60	S
Cisco 10000 Series Routers	10008 ESR1	1.3.6.1.4.1.9.1.438	V

Table 5 Supported Cisco Routers in Cisco ANA 3.6 SP1 (continued)

Device Series	NE Type	SysOID	Certification Level
Cisco 12000 Series Routers	cisco12004	1.3.6.1.4.1.9.1.181	V
	cisco12006	1.3.6.1.4.1.9.1.590	V
	cisco12008	1.3.6.1.4.1.9.1.182	V
	cisco12010	1.3.6.1.4.1.9.1.348	V
	cisco12012	1.3.6.1.4.1.9.1.173	V
	cisco12016	1.3.6.1.4.1.9.1.273	V
	cisco12404	1.3.6.1.4.1.9.1.423	V
	cisco12406	1.3.6.1.4.1.9.1.388	V
	cisco12410	1.3.6.1.4.1.9.1.394	V
	cisco12416	1.3.6.1.4.1.9.1.385	V
	cisco12810	1.3.6.1.4.1.9.1.478	V
	cisco12816	1.3.6.1.4.1.9.1.477	V
Cisco XR 12000 Series Routers	cisco12006	1.3.6.1.4.1.9.1.590	V
	cisco12008	1.3.6.1.4.1.9.1.182	V
	cisco12010	1.3.6.1.4.1.9.1.348	V
	cisco12012	1.3.6.1.4.1.9.1.173	V
	cisco12016	1.3.6.1.4.1.9.1.273	V
	cisco12404	1.3.6.1.4.1.9.1.423	V
	cisco12406	1.3.6.1.4.1.9.1.388	V
	cisco12410	1.3.6.1.4.1.9.1.394	V
	cisco12416	1.3.6.1.4.1.9.1.385	V
	cisco12810	1.3.6.1.4.1.9.1.478	V
	cisco12816	1.3.6.1.4.1.9.1.477	V
Cisco Carrier Routing System (CRS-1) Routers	ciscoCrs16S	1.3.6.1.4.1.9.1.613	V
	ciscoCrs8S	1.3.6.1.4.1.9.1.643	V
	ciscoCrs4S	1.3.6.1.4.1.9.1.822	V

Supported Cisco Switches in Cisco ANA 3.6 SP1

This document includes support information for the following Cisco switches:

Table 6 lists the Cisco switch NE types that are supported in Cisco ANA 3.6 SP1.

Table 6 Supported Cisco Switches in Cisco ANA 3.6 SP1

Device Series	NE Type	SysOID	Certification Level
Cisco Catalyst 2900 Series Switches	cat2948gL3	.1.3.6.1.4.1.9.1.275	S
	cat2948gL3Dc	.1.3.6.1.4.1.9.1.386	S
	wsc2900sysID	.1.3.6.1.4.1.9.5.12	S
	wsc2948gsysID	.1.3.6.1.4.1.9.5.42	S
	C2960-24TT	.1.3.6.1.4.1.9.1.716	S
	catalyst2908xl	.1.3.6.1.4.1.9.1.170	S
	catalyst2912MfXL	.1.3.6.1.4.1.9.1.221	S
	catalyst2912XL	.1.3.6.1.4.1.9.1.219	S
	catalyst2916m-xl	.1.3.6.1.4.1.9.1.171	S
	catalyst2924CXL	.1.3.6.1.4.1.9.1.184	S
	catalyst2924CXLv	.1.3.6.1.4.1.9.1.218	S
	catalyst2924MXL	.1.3.6.1.4.1.9.1.220	S
	catalyst2924XL	.1.3.6.1.4.1.9.1.183	S
	catalyst2924XLv	.1.3.6.1.4.1.9.1.217	S
	catalyst295012	.1.3.6.1.4.1.9.1.323	S
	catalyst295012G	.1.3.6.1.4.1.9.1.427	S
	catalyst295048T	.1.3.6.1.4.1.9.1.559	S
	catalyst295024C	.1.3.6.1.4.1.9.1.325	S
	catalyst295024G	.1.3.6.1.4.1.9.1.428	S
	catalyst295024GDC	.1.3.6.1.4.1.9.1.472	S
	catalyst295024S	.1.3.6.1.4.1.9.1.430	S
	catalyst295048G	.1.3.6.1.4.1.9.1.429	S
	catalyst2950t24	.1.3.6.1.4.1.9.1.359	S

Table 6 Supported Cisco Switches in Cisco ANA 3.6 SP1 (continued)

Device Series	NE Type	SysOID	Certification Level
Cisco ME 3400 Series Ethernet Access Switches	3400-24TS-A	1.3.6.1.4.1.9.1.736	N
	3400-24TS-D	1.3.6.1.4.1.9.1.737	N
	3400G-12CS A	1.3.6.1.4.1.9.1.780	S
	3400G-12CS D	1.3.6.1.4.1.9.1.781	N
	3400G-2CS A	1.3.6.1.4.1.9.1.825	N
Cisco Catalyst 3500 XL Series Switches	cat3524tXLEn	1.3.6.1.4.1.9.1.287	S
	cat3548XL	1.3.6.1.4.1.9.1.278	S
	catalyst3508GXL	1.3.6.1.4.1.9.1.246	S
	catalyst3512XL	1.3.6.1.4.1.9.1.247	S
	catalyst3524XL	1.3.6.1.4.1.9.1.248	S
Cisco Catalyst 3550 Series Switches	3550 24 DC SMI	1.3.6.1.4.1.9.1.452	S
	3550 24 MMF	1.3.6.1.4.1.9.1.453	S
	3550 24 PWR	1.3.6.1.4.1.9.1.485	S
	3550 48	1.3.6.1.4.1.9.1.367	S
	3550 12G	1.3.6.1.4.1.9.1.431	S
	3550 24	1.3.6.1.4.1.9.1.366	V
	3550 24Dc	1.3.6.1.4.1.9.1.452	S
Cisco Catalyst 3560 Series Switches	catalyst356024PS	.1.3.6.1.4.1.9.1.563	S
	catalyst356048PS	.1.3.6.1.4.1.9.1.564	S
	catalyst3560G24PS	.1.3.6.1.4.1.9.1.614	S
	catalyst3560G24TS	.1.3.6.1.4.1.9.1.615	S
	catalyst3560G48PS	.1.3.6.1.4.1.9.1.616	S
	catalyst3560G48TS	.1.3.6.1.4.1.9.1.617	S
	catalyst356024TS	.1.3.6.1.4.1.9.1.633	S
Cisco Catalyst 3750 Series Switches	catalyst37xxStack	1.3.6.1.4.1.9.1.516	S
Cisco Catalyst 3750 Metro Series Switches	catalyst375024ME	1.3.6.1.4.1.9.1.574	S
Cisco Catalyst 4000 Series Switches	wsc4003sysID	.1.3.6.1.4.1.9.5.40	S
	wsc4006sysID	.1.3.6.1.4.1.9.5.46	S
	catalyst4kGateway	.1.3.6.1.4.1.9.1.318	S
	cat4232L3	.1.3.6.1.4.1.9.1.300	N
	cat4840gL3	.1.3.6.1.4.1.9.1.312	N
	cisco4000	.1.3.6.1.4.1.9.1.7	S

Table 6 Supported Cisco Switches in Cisco ANA 3.6 SP1 (continued)

Device Series	NE Type	SysOID	Certification Level
Cisco Catalyst 4500 Series Switches	cisco4500	1.3.6.0.1.4.1.9.1.14	V
	cat4506	1.3.6.0.1.4.1.9.1.502	V
	wsc4506sysID	1.3.6.0.1.4.1.9.5.59	V
	cat4507	1.3.6.0.1.4.1.9.1.501	V
Cisco ME 4900 Series Ethernet Access Switches	WS-C4948	1.3.6.1.4.1.9.1.626	S
	WS-C4948-E	1.3.6.1.4.1.9.1.626	S
	WS-C4948-S	1.3.6.1.4.1.9.1.626	S
	WS-C4948-10GE	1.3.6.1.4.1.9.1.659	S
	WS-C4948-10GE-E	1.3.6.1.4.1.9.1.659	S
	WS-C4948-10GE-S	1.3.6.1.4.1.9.1.659	S
	ME 4924-10GE	1.3.6.1.4.1.9.1.788	S
Cisco Catalyst 6500 Series (IOS) Switches	cat6006	1.3.6.1.4.1.9.1.280	V
	cat6500FirewallSm	1.3.6.1.4.1.9.1.522	V
	cat6500SslSm	1.3.6.1.4.1.9.1.554	V
	cat6509NEBAIOS	1.3.6.1.4.1.9.1.534	V
	cat6509NEBIOS	1.3.6.1.4.1.9.1.310	V
	cisco6503	1.3.6.1.4.1.9.1.449	V
	cisco6506IOS	1.3.6.1.4.1.9.1.282	V
	cisco6509IOS	1.3.6.1.4.1.9.1.283	V
	ciscoOSR7603	1.3.6.1.4.1.9.1.401	V
	ciscoWSC6504E	1.3.6.1.4.1.9.1.657	V
	ciscoWSC6513	1.3.6.1.4.1.9.1.400	V
Cisco Catalyst 6500 Series (CatOS) Switches	wsc6009sysID	1.3.6.1.4.1.9.5.39	V
	wsc6506sysID	1.3.6.1.4.1.9.5.45	V
	wsc6509nebasysID	1.3.6.1.4.1.9.5.61	V
	wsc6509nebsysID	1.3.6.1.4.1.9.5.47	V
	wsc6513sysID	1.3.6.1.4.1.9.5.50	V
	wsc6509sysID	1.3.6.1.4.1.9.5.44	V
	wsc6504esysID	1.3.6.1.4.1.9.5.64	V
Cisco ME 6500 Series Ethernet Switches	ME-C6524GS-8S	.1.3.6.1.4.1.9.1.719	S

Supported Juniper Devices in Cisco ANA 3.6 SP1

Table 7 lists the Juniper devices that are supported in Cisco ANA 3.6 SP1.

Table 7 Supported Juniper Devices in Cisco ANA 3.6 SP1

Device Series	NE Type	SysOID	Certification Level
Juniper M-Series Routers	JnxM10i	.1.3.6.1.4.1.2636.1.1.1.2.11	S
	JnxM40e	.1.3.6.1.4.1.2636.1.1.1.2.8	S
	JnxM320	.1.3.6.1.4.1.2636.1.1.1.2.9	S
	JnxM5i	.1.3.6.1.4.1.2636.1.1.1.2.5	S

Support Information for Alcatel-Lucent Devices

This chapter contains the Virtual Network Element (VNE) device support information in Cisco ANA 3.6 SP1 for the following devices:

- Alcatel-Lucent 7302 Intelligent Services Access Manager (ISAM) DSLAMs, page 15
- Alcatel-Lucent 7450 Ethernet Service Switch, page 19
- Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches, page 21

For information about the technologies supported by each of these VNEs, see Supported Technologies on Alcatel-Lucent Devices, page 27.

Alcatel-Lucent 7302 Intelligent Services Access Manager (ISAM) DSLAMs

This section includes the following information about Alcatel-Lucent 7302 ISAM DSLAMs:

- Alcatel-Lucent 7302 ISAM—Supported Software Versions, page 16
- Alcatel-Lucent 7302 ISAM—Supported Topologies, page 16
- Alcatel-Lucent 7302 ISAM—Supported Modules, page 16
- Alcatel-Lucent 7302 ISAM—Supported Technologies, page 18
- Alcatel-Lucent 7302 ISAM—Supported Events, page 18

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Alcatel-Lucent Devices in Cisco ANA 3.6 SP1.

Alcatel-Lucent 7302 ISAM—Supported Software Versions

Table 8 lists the supported software versions for Alcatel-Lucent 7302 ISAM DSLAMs in Cisco ANA 3.6 SP1.

Table 8 Supported Software Versions for Alcatel-Lucent 7302 ISAM DSLAMs

Software Version	Certification Level
2.0.0.16	V
2.3.1.15	V
2.4.2.4	V

Alcatel-Lucent 7302 ISAM—Supported Topologies

The following topologies are supported for Alcatel-Lucent 7302 ISAM DSLAMs in Cisco ANA 3.6 SP1:

- ATM counters

Alcatel-Lucent 7302 ISAM—Supported Modules

Table 9 lists the supported modules for Alcatel-Lucent 7302 ISAM DSLAMs in Cisco ANA 3.6 SP1.

Table 9 Supported Modules for Alcatel-Lucent 7302 ISAM DSLAMs

Module Name	Module Description	Certification Level
AACU-A	ADSL Alarm Control Unit version A (R3 equipment)	V
AACU-C	ADSL Alarm Control Unit version C (R4 equipment)	V
ABLT-D	MultiDSL POTS UD BVB LT standard version D	V
ABLT-E	Multi-DSL POTS Line Termination version E	V
ADLT-C	ADSL Line termination version C (4 lines)	V
ADLT-E	ADSL Line termination version E (4 lines)	V
ADLT-F	ADSL (Euro) Line termination version F (ISDN support, 4 lines)	V
ADLT-J	ADSL Line termination version J (12 lines)	V
ADLT-K	ADSL Line termination version K (12 lines)	V
ADLT-L	ADSL Line termination version L (24 lines)	V
ADLT-M	ADSL Line termination version M (12 lines)	V
ADLT-S	ADSL Line Termination version S - BVB enabled	V

Table 9 Supported Modules for Alcatel-Lucent 7302 ISAM DSLAMs (continued)

Module Name	Module Description	Certification Level
ADLT-W	ADSL Line Termination version W - POTS/BVB ready	V
ADSE-A	ADSL Serial Extender version A	V
ADSE-B	ADSL Serial Extender version B	V
ADSE-C	ADSL Serial Extender version C	V
AICC-A	IMA ATM E1-NT 2 Mits Controller Card	V
ANY_BOARD	ANY_BOARD	V
ASCC-P	ASCC-P	V
ASCC-PE	PDH E3 Interface Controller Card	V
ASCC-S1	STM-1 Interface Controller Card	V
BSEC-A	Broad Band Shelf Extender Card	V
D1LT-A	DS1 Line termination version A	V
D1LT-B	4 T1 ports Using IMA Group	V
D3LT-A	DS3 Line termination version A	V
D3NT-A	DS3 Network Termination version A	V
D3NT-C	DS3 Network Termination version C	V
E1LT-A	E1 (IMA) Line Termination version A (4 lines)	V
E1NT-A	(Quad) E1 (IMA) Network Termination version A	V
E1NT-C	GANT-B motherboard and E1PL-B daughterboard (PLIM)	V
EBLT-A	ADSL2+ POTS Line Termination version A	V
EBLT-C	ADSL2+ POTS Line Termination version C	V
ECNT-A	7302 ISAM Combined network termination version A	V
LTAC-C	Line Terminal ADSL Combiner Card	V
LTAC-D	Line Terminal ADSL Combiner Card	V
LTSC-A	Line Termination SHDSL Card	V
MACU-A	MiniRAM ACU version A	V
NBLC-A	Narrowband Line Card	V
SALT-A	1 Port OC3 Card	V
SALT-C	STM-1/OC3c (HCL based) Line Termination Unit version C	V
SANT-D	Synchronous (STM1) ATM Network Termination version D	V
SANT-E	GANT-A motherboard and SONI-A daughterboard (PLIM)	V

Table 9 Supported Modules for Alcatel-Lucent 7302 ISAM DSLAMs (continued)

Module Name	Module Description	Certification Level
SANT-F	GANT-B motherboard and SONI-A daughterboard (PLIM)	V
SANT-G	Synchronous (STM1) ATM Network Termination version G	V
SHLT-B	SHDSL Line termination versoion B (12 lines)	V
SMLT-A	SHDSL Line termination version A (24 lines with IMA)	V
SMLT-B	SHDSL Line Termination Unit Version B(12 lines, with IMA)	V

Note For detailed information about the specific technologies and attributes supported by this NE, see Alcatel-Lucent 7302 ISAM—Supported Technologies, page 18.

Alcatel-Lucent 7302 ISAM—Supported Technologies

The following technologies are supported by the Alcatel-Lucent 7302 ISAM in Cisco ANA 3.6 SP1:

Alcatel-Lucent 7302 ISAM—Supported Events

Table 10 lists the supported service events for Alcatel-Lucent 7302 ISAM DSLAMs in Cisco ANA 3.6 SP1.

Table 10 Service Events for Alcatel-Lucent 7302 ISAM DSLAMs

Event Name	Expedited
card in/out	N
link down/up	N
Device Unreachable	N
CPU Over Utilized	N

Table 10 Service Events for Alcatel-Lucent 7302 ISAM DSLAMs (continued)

Event Name	Expedited
Memory Over utilize	N
Device Unsupported	N
Module Unsupported	N
Port Flapping	N
Port Down	N
Card up/down	N

Alcatel-Lucent 7450 Ethernet Service Switch

This section includes the following information about Alcatel-Lucent 7450 Ethernet Service Switch devices:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Alcatel-Lucent Devices in Cisco ANA 3.6 SP1.

Alcatel-Lucent 7450 Ethernet Service Switch—Supported Software Versions

Table 11 lists the supported software versions for Alcatel-Lucent 7450 Ethernet Service Switch devices in Cisco ANA 3.6 SP1.

Table 11 Supported Software Versions for Alcatel-Lucent 7450 Ethernet Service Switch

Software Version	Certification Level
3.0.R1	V
3.0.R7	V
4.0.R5	V

Alcatel-Lucent 7450 Ethernet Service Switch—Supported Topologies

The following topologies are supported for Alcatel-Lucent 7450 Ethernet Service Switch devices in Cisco ANA 3.6 SP1:

- MAC

Alcatel-Lucent 7450 Ethernet Service Switch—Supported Modules

Table 12 lists the supported modules for Alcatel-Lucent 7450 Ethernet Service Switch devices in Cisco ANA 3.6 SP1.

Table 12 Supported Modules for Alcatel-Lucent 7450 Ethernet Service Switch

Module Name	Module Description	Certification Level
M10-1GB-SFP	MDA 10 Ports 1-Gigabit Ethernet SFP	V
M16-OC12/3-SFP	MDA 16 Ports OC12/OC3 SFP	V
M8-OC12/3-SFP	MDA 8 Ports OC12/OC3 SFP	V
M16-OC3-SFP	MDA 16 Ports OC3 SFP	V
M4-OC48-SFP	MDA 4 Ports OC48 SFP	V
M1-10GB	MDA 1 Port 10 GigabitP	V
M2-OC48-SFP	MDA 2 Ports OC48 SFP	V
20-100ETH-SFP	MDA 20 Port 100FX	V
M20-1GB-TX	MDA 20 Ports 10/100/1000 Ethernet TX	V
M2-10GB-XFP	MDA 2 Ports 10Gig Ethernet XFP	V
M20-1GB-SFP	MDA 20 Ports 10/100/1000 Ethernet SFP	V
VSM-CCA	VSM Cross Connect	V
M5-1GB-SFP-B	MDA 5 Ports 10/100/1000 Ethernet SFP	V
M10-1GB-SFP-B	MDA 10 Ports 10/100/1000 Ethernet SFP	V
SFM-200G	200g CPM/SF module	V
SFM-100G	100g CPM/SF module	V
SFM2-200G	200g CPM/SF module	V
IOM-20G	2 x 10-Gig MDA IOM Card	V
M60-10/100ETH-TX	MDA 60 Ports 10/100 Ethernet TX	V
M60-10/100ET-TX	MDA 60 Ports 10/100 Ethernet TX	V
IOM-20G-B	2 x 10-Gig MDA IOM Card, B	V
IOM-20G	2 x 10-Gig MDA IOM Card	V

Note For detailed information about the specific technologies and attributes supported by this NE, see Alcatel-Lucent 7450 Ethernet Service Switch—Supported Technologies, page 20.

Alcatel-Lucent 7450 Ethernet Service Switch—Supported Technologies

The following technologies are supported by the Alcatel-Lucent 7450 Ethernet Service Switch in Cisco ANA 3.6 SP1:

- Base Logical Components, page 28

Alcatel-Lucent 7450 Ethernet Service Switch—Supported Service Events

Table 13 lists the supported service events for Alcatel-Lucent 7450 Ethernet Service Switch devices in Cisco ANA 3.6 SP1.

Table 13 Service Events for Alcatel-Lucent 7450 Ethernet Service Switch

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Device Unsupported	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Card up/down	Y

Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches

This section includes the following information about Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Alcatel-Lucent Devices in Cisco ANA 3.6 SP1.

Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches—Supported Software Versions

Table 14 lists the supported software versions for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 switches in Cisco ANA 3.6 SP1.

Table 14 Supported Software Versions for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches

Software Version	Certification Level
07.02.02.08	S
07.02.04.19	S
07.03.01.14	S
08.00.03.11	S
08.00.03.11	S
08.00.03.07	S
08.00.03.11	S
08.00.03.22	S
09.01.01.04	S
09.01.01.13	S

Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches—Supported Topologies

The following topologies are supported for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 switches in Cisco ANA 3.6 SP1:

- ATM counters

Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches—Supported Modules

Table 15 lists the supported modules for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 switches in Cisco ANA 3.6 SP1.

Table 15 Supported Modules for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches

Module Name	Module Description	Certification Level
V35-6	6-port V.35 i/o card	S
FE3-1	1-port Fractional E3 i/o card	S
PON-ETHER-2	PON R2.0 Ethernet UNI sub-card 2 port	S
BIO4-CH	Scorpion channelized BIO	S
BIO4-CH-OC12-1	Scorpion channelized OC12 PHY 1 port	S

Table 15 Supported Modules for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches

Module Name	Module Description	Certification Level
BIO4-CH-STM1-2	Scorpion channelized stm-1 PHY 2 port	S
BIO4-CH-OC12-2	Scorpion channelized OC12 PHY 2 port	S
BIO4-CH-DS3-12	Scorpion channelized DS3 12 port	S
IOM6-CH-DS3-T3-6	Positron channelized DS3 6 port	S
IOM5-OC3-4	Positron OC3 ATM/POS card	S
IOM5-OC12-1	Positron OC12 ATM/POS card	S
IOM5-IP-SERVER	Positron IP Server card	S
HSSI-2	HSSI i/o card	S
NP-2	NP2	S
BIO4-CH-OC3-2	Scorpion channelized OC3 PHY 2 port	S
BIO4-CH-DS3-10	Scorpion channelized DS3 PHY 10 port	S
DSX1-10	10-port DSX-1 card	S
RS232-18	18-port X.21/V.24 I/O card, for STDX 3000/6000 only	S
RS232-8	8-port X.21/V.24 I/O card, for STDX 3000/6000 only	S
UT1-4-24	4-port 24-channel Un-Channelized T1	S
UE1-4-30	4-port 30-channel Un-Channelized E1	S
ATMDS3-1	1-port ATM DS3 UNI I/O card	S
ATME3-1	1-port ATM E3 UNI I/O card	S
PRI-4	4-port ISDN PRI I/O card	S
FT1-1-24	1-port 24-channel Fractional T1	S
E1-PRI-4	4-port E1 PRI I/O card	S
SFT1-4-24	4-port short haul 24-channel Fractional T1 card	S
SUT1-4-24	4-port short haul 24-channel Un-Channelized T1 card	S
ST1-PRI-4	4-port short haul PRI I/O card	S
T1-ATM	T1 ATM	S
E1-ATM	E1 ATM	S
ADS3-T3	ATM DS3 T3 (topaz)	S
ADS3-E3	ATM DS3 E3 (topaz)	S
CBR-DS1-S-4	4-port CBR T1 structured card	S
CBR-DS1-US-4	4-port CE T1 card	S
FE1-1-30	1-port 30-channel Fractional E1	S
CBR-E1-S-4	4-port CBR E1 structured card	S
CBR-E1-US-4	4-port CE E1 card	S

Table 15 Supported Modules for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches

Module Name	Module Description	Certification Level
ATMIWU-1	1-port ATM-IWU STM-1/STS-3c card	S
TOC3-ATM-4	4-port Topaz OC3c/STM1 ATM card	S
TSTM1-ATM-4	4-port Topaz STM1 ATM card (OBSOLETE code)	S
SP-4	4x4 switching processor (new terminology is "sp-10")	S
SP-8	8x8 switching processor (new terminology is "sp-20")	S
ATMCS-1	1-port ATM-CS card (siemens)	S
TOC12-ATM-1	1-port Topaz OC12c/STM4 ATM card	S
TSTM4-ATM-1	1-port Topaz STM4 ATM card (OBSOLETE code)	S
UIO-6	6-port universal i/o card	S
ADS1-T1	Topaz 8 port T1 ATM	S
ADS1-E1	Topaz 8 port E1 ATM	S
ADS1-J2	Topaz 8 port J2 ATM	S
E1-12	12-port E1 i/o card	S
BIO1416	Garnet BIO1 4 PHY sub-cards 16 ports	S
BIO1OC34	Garnet BIO1 OC3 PHY sub-card 4 ports	S
BIO1OC121	Garnet BIO1 OC12 PHY sub-card 1 port	S
BIO1OC12X4	Garnet BIO1 OC12x4 PHY sub-card 1 port 4 channels	S
BIO1OC481	Garnet BIO1 OC48 PHY sub-card 1 port	S
NP1	Garnet Node Processor card	S
CP1	Control Processor	S
SF1	Garnet Switch Fabric card	S
TM1	Garnet Timing Module card	S
TFDS3-T3-6	6-port Topaz DS3 T3 Ultracore card	S
TFDS3-E3-6	6-port Topaz DS3 E3 Ultracore card	S
TFAST-ETHER-4	4-port Topaz Fast Ethernet Ultracore card	S
FAST-ETHER-2	2-port BSTDX Fast Ethernet Ultracore card	S
LS-OC3-1	1-port BSTDX OC3c/STM-1 Ultracore card	S
TCFDS3-T3-6	6-port Topaz Cell Frame Cell DS3 T3 Ultracore card	S
TCFDS3-E3-6	6-port Topaz Cell Frame Cell DS3 E3 Ultracore card	S
TOC3-CFC-2	2-port Topaz Cell Frame Cell OC3c/STM-1 Ultracore card	S

Table 15 Supported Modules for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches

Module Name	Module Description	Certification Level
UIO-8	8-port V.35 i/o card	S
ATMCS-E3-1	1-port ATM-CS-E3 card (siemens)	S
BE1-ATM-12	12-port BSTDX E1 ATM card	S
BT1-ATM-12	12-port BSTDX T1 ATM card	S
BDS3-1-0	1 port BSTDX Channelized 3/1/0	S
GFETHER-4	Granite Topaz Fast Ethernet UC card	S
GFDS3-T3-6	Granite Topaz Frame DS3 UC card	S
GFDS3-E3-6	Granite Topaz Frame E3 UC card	S
GCHN-DS3-4	Granite Topaz Channalized DS3 card	S
G-SERVER	Granite Topaz Server card	S
FT1-4-24	4-port 24-channel Fractional T1	S
SP-30	8x8 sp with new PTS	S
SP-40	8x8 sp with new PTS and more memory	S
BIO3	Piranha GX550 Frame card	S
GENET-1	Piranha Gigabit Ethernet PHY	S
BIO1-DOWNLINK-1	GARNET DOWNLINK PHY card for shelf communications attachment	S
SHELF-UPLINK-1	1-port Shelf (fc) UPLINK card	S
SHELF-DS3-4	4-port Shelf DS3 transport card	S
SHELF-RED-DS3-4	4-port Shelf Redundant DS3 transport card	S
BRVX	BSTDX RVX Card	S
BCH-DS1-E1-12	12-port 9000 Channelixed T1/E1 Card	S
FE1-4-30	4-port 30-channel Fractional E1	S
CBX-SUB-DS3	CBX Subrate DS3 Card	S
BIO1-DS3-4	Garnet BIO1 DS3 PHY sub-card 4 Ports	S
BIO1-E3-4	Garnet BIO1 DS3 PHY sub-card 4 Ports	S
ADS3-IMA-T3-3-28	TOPAZ Tsunami 3Port T3 IMA	S
ADS3-IMA-E3-3-30	TOPAZ Tsunami 3Port E3 IMA	S
BIO2-4-16	Garnet BIO2 4 PHY sub-cards 16 ports	S
SHELF-DS3-1-0-2	2 port GX250 DS3-1-0 Transport Card	S
SHELF-OC12-1	1 port GX250 OC12-OC3-DS3 Transport Card	S
BIO3-OC3-4	BIO3 OC3 ATM/POS PHY	S
BIO3-OC12-1	BIO3 OC12 ATM/POS PHY	S
FT3-1	1-port Fractional T3 i/o card	S
BIO3-IP-SERVER	BIO3 IP Server PHY	S
BIO3-OC12X4	BIO3 OC48 channelized PHY	S

Table 15 Supported Modules for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches

Module Name	Module Description	Certification Level
BIO3-OC48-1	BIO3 OC48c PHY	S
GCHN-E1T1-32	Granite Topaz Channalized E1/T1 card	S
BIO-OSU-1	BIO OSU PHY sub-card 1 port	S
BIO-OSU-4	BIO OSU PHY sub-card 4 port	S
PON-DS1-4	PON DS1 UNI sub-card 4 port	S
PON-DS1-8	PON DS1 UNI sub-card 8 port	S
PON-R1ETHER-1	PON R1.0 Ethernet UNI sub-card 1 port	S
PON-R2ETHER-1	PON R2.0 Ethernet UNI sub-card 1 port	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches—Supported Technologies, page 26.

Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches—Supported Technologies

The following technologies are supported by Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 switches in Cisco ANA 3.6 SP1:

Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches—Supported Service Events

Table 16 lists the supported service events for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 switches in Cisco ANA 3.6 SP1.

Table 16 Service Events for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches

Event Name	Expedited
interface status down/up	N
card in/out	N
link down/up	N

Table 16 Service Events for Alcatel-Lucent CBX 500, GX 550, B-STDX 9000 Switches

Event Name	Expedited
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Module Unsupported	N
Port Down	N
Rx Over utilized	N
Tx Over utilized	N
Card up/down	N

Supported Technologies on Alcatel-Lucent Devices

The following sections list the objects and attributes that are supported on Alcatel-Lucent devices in Cisco ANA 3.6 SP1 per technology:

Note For more information about the objects and attributes described in this chapter, see *Cisco Active Network Abstraction Technology Support and Information Model Reference Manual, Version 3.6 Service Pack 1.*

Base Logical Components

Table 17 summarizes base logical component support on Alcatel-Lucent devices in Cisco ANA 3.6 SP1.

Table 17 Base Logical Component Support on Alcatel-Lucent Devices

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
Managed Element Object (IMO Name—IManagedElement)			
IP Address	Y	Y	Y
Communication State	Y	Y	Y
Investigation State	Y	Y	Y
Element Category	Y	Y	Y
Element Type and Key	Y	Y	Y
Device Name	Y	Y	Y
System Name	Y	Y	Y
System Description	Y	Y	Y
Up Time	Y	Y	Y
Software Version	Y	Y	Y
Vendor Identity	Y	Y	Y
Memory and CPU Usage		Y	Y
Agent Memory	Y	Y	Y
Number of Device Components			
Number of Logical Entries			

Layer 1

Table 18 summarizes Layer 1 attribute support on Alcatel-Lucent devices in Cisco ANA 3.6 SP1.

Table 18 Layer 1 Attribute Support on Alcatel-Lucent Devices

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
Physical Layer Object (IMO Name—IPhysicalLayer)			
Media Type	Y	Y	Y
Clocking Source	Y		Y
Maximum Speed	Y	Y	Y
Is Internal Port	Y	Y	Y

Table 18 Layer 1 Attribute Support on Alcatel-Lucent Devices (continued)

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
Maximum and Minimum Discarded Thresholds	Y	Y	Y
Discarded Bandwidth			
Maximum and Minimum Dropped Thresholds	Y	Y	Y
Dropped Bandwidth			
Maximum and Minimum Input Threshold	Y	Y	Y
Input Bandwidth			
Maximum and Minimum Output Thresholds	Y	Y	Y
Output Bandwidth			
Discarded and Received Input Data Counters	Y	Y	Y
Dropped and Forward Output Data Counters	Y	Y	Y
Administrative Status	Y	Y	Y
Operational Status	Y	Y	Y
Operational Status Date	Y	Y	Y
IANA Type	Y	Y	Y

IP

Table 19 summarizes IP attribute support on Alcatel-Lucent devices in Cisco ANA 3.6 SP1.

Table 19 IP Attribute Support on Alcatel-Lucent Devices

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
IP Interface Object (IMO Name—IIPInterface)			
IP Address	Y	Y	Y
Subnetwork Mask	Y	Y	Y
IP Interface Addresses	Y	Y	Y
Interface Name	Y	Y	Y
Interface Description			Y

Table 19 IP Attribute Support on Alcatel-Lucent Devices (continued)

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
IP Interface State	Y	Y	Y
OSPF Interface Cost			
Broadcast Address			
MTU			
Lookup Method			
Address Resolution Type			
ARP Timeout			
Secured ARP			
ICMP Mask Reply			
IGMP Proxy			
HSRP Groups			
IP Multiplexing Table			
IANA Type	Y	Y	
Routing Entry Object (IMO Name—IRoutingEntry)			
Destination IP Subnet	Y	Y	Y
Next Hop IP Address	Y	Y	Y
Type	Y	Y	Y
Routing Protocol Type	Y	Y	Y
Outgoing Interface Name	Y	Y	Y
ARP Entry Object (IMO Name—IARPEntry)			
IP Address	Y		
MAC Address	Y		
Port	Y		
Entry Type	Y		
HSRP Group Entry Object (IMO Name—HSRPGroupEntry)			
Group Number			
Port Description			
Priority			
Coupled Router			
State			
Tracking Interfaces			
Virtual IP Address			
Virtual MAC Address			

Ethernet (Physical)

Table 20 summarizes support for physical Ethernet attributes on Alcatel-Lucent devices in Cisco ANA 3.6 SP1.

Table 20 Ethernet Physical Attribute Support on Alcatel-Lucent Devices

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
Ethernet Channel Object (IMO Name—IEthernetChannel)			
Channel Group		Y	
Channel Bandwidth			
IANA Type		Y	
Ethernet Interface Object (IMO Name—IEthernet)			
MAC Address	Y	Y	
Duplex Mode			
Output Flow Control			
Input Flow Control			
IANA Type	Y		

Physical Equipment

Table 21 summarizes physical equipment support on Alcatel-Lucent devices in Cisco ANA 3.6 SP1.

Table 21 Physical Equipment Support on Alcatel-Lucent Devices

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
Module/Board Object (IMO Name—Imodule)			
Module Name	Y	Y	Y
Module Description	Y	Y	Y
Software Version	Y	Y	Y
Operational Status	Y	Y	Y
Hardware Type & Version	Y	Y	Y
Managed IP Address	Y		
Redundant Equipment		Y	
Configured Redundancy		Y	Y
Redundancy Status	Y	Y	Y

Table 21 Physical Equipment Support on Alcatel-Lucent Devices (continued)

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
Operational Status Last Changed	Y	Y	Y
Supported Physical Termination Points	Y	Y	Y
Serial Number (soft property)	Y	Y	Y
Chassis Object (IMO Name—Ichassis)			
Equipment Holder Type	Y		Y
Description	Y		Y
Serial Number	Y	Y	

Ethernet (Logical)

Table 22 summarizes support for logical Ethernet attributes on Alcatel-Lucent devices in Cisco ANA 3.6 SP1.

Table 22 Ethernet Logical Attribute Support on Alcatel-Lucent Devices

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
VLAN Encapsulation Object (IMO Name—IIEEE802)			
VLAN Identification	Y	Y	
Binding Information			
Binding Status			
IANA Type	Y		
Bridging Entry Object (IMO Name—IBridgeEntry)			
Destination MAC Address	Y	Y	
Outgoing Interface	Y		

ATM

Table 23 summarizes support for Asynchronous Transfer Mode (ATM) attributes on Alcatel-Lucent devices in Cisco ANA 3.6 SP1.

Table 23 ATM Attribute Support on Alcatel-Lucent Devices

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
ATM Interface Object (IMO Name—IAtm)			
ATM Address			
Interface Type			Y
VP and VC Ranges	Y		Y
VC Table	Y		Y
Cross-Connect Table			Y
IANA Type			Y
ATM VC Object (IMO Name—IAtmVc)			
Virtual Channel Identifier	Y		Y
Virtual Path Identifier	Y		Y
Shaping Profile			
Discarded and Received Input Data Counters	Y		Y
Dropped and Forward Output Data Counters	Y		Y
Ingress Traffic Descriptor	Y		Y
Egress Traffic Descriptor	Y		Y
Administrative Status	Y		Y
Operational Status	Y		Y
IANA Type			
Virtual Connection Encapsulation Object (IMO Name—IVcBasedEncapsulation)			
Virtual Connection Interface			
Binding Information			
Binding Status	Y		
IANA Type			
ATM Traffic Descriptor Object (IMO Name—IAtmTrafficDescriptor)			
Traffic Descriptor Type	Y		Y
Service Category	Y		Y
Cell Loss Priority	Y		Y

Table 23 ATM Attribute Support on Alcatel-Lucent Devices (continued)

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
Cell Delay Variation	Y		
Cell Delay Variation Tolerance	Y		Y
Maximum High Priority and Aggregate Burst Rates	Y		Y
Minimum High Priority and Aggregate Cell Rates	Y		Y
Sustainable High Priority and Aggregate Cell Rates	Y		Y
Peak High Priority and Aggregate Cell Rates	Y		Y
Name	Y		
Index	Y		
ATM Access Traffic Descriptor Object (IMO Name—IAtmAccessTrafficDescriptor)			
Scope	Y		
Maximum Active VPCs and VCCs	Y		
Maximum Supported VPI and VCI Bits	Y		
Generic Flow Control Mode	Y		
Police Mode	Y		
Name	Y		
Index	Y		
ATM Logical Interface Object (IMO Name—IAtmLogicalPort/Trunk)			
Same as ATM interface			Y

Frame Relay

Table 24 summarizes support for Frame Relay attributes on Alcatel-Lucent devices in Cisco ANA 3.6 SP1.

Table 24 Frame Relay Attribute Support on Alcatel-Lucent Devices

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
Frame Relay Interface Object (IMO Name—Iframerelay/IFrTrunk)			
Address Format			
Maximum Supported VCs			Y
Protocol Type			Y
VC Table			Y
Cross-Connect Table			Y
IANA Type			
Frame Relay VC Object (IMO Name—IFrVc)			
Data Link Connection Identifier			Y
Traffic Descriptor			Y
Discard and Received Input Data Counters			
Dropped and Forward Output Data Counters			
Ingress Traffic Descriptor			Y
Egress Traffic Descriptor			Y
Administrative Status			Y
Operational Status			Y
IANA Type			
Frame Relay Traffic Descriptor Object (IMO Name—IFRTrafficDescriptor)			
Committed Rate			Y
Excess Burst Rate			Y
Name			Y
Index			Y
Frame Relay Logical Interface Object (IMO Name—IFramerelayLogicalPort/Trunk)			
Same as IFrameRelay			Y

DSL

Table 25 summarizes support for digital subscriber line (DSL) attributes on Alcatel-Lucent devices in Cisco ANA 3.6 SP1.

Table 25 DSL Attribute Support on Alcatel-Lucent Devices

Attribute	7302	7450	CBX 500 GX 550 B-STDX 9000
DSL Interface Object (IMO Name—IDsl)			
Modulation Type			
Customer Identification	Y		
Traffic Descriptor	Y		
IANA Type			
ADSL Interface Object (IMO Name—IADsl)			
Maximum Reception and Transmission Bandwidth	Y		
Same as Idsl			
Spectrum Traffic Descriptor	Y		
Traffic Descriptor	Y		
Same as IADsl			

Support Information for Cisco Gateways

This chapter contains the Virtual Network Element (VNE) device support information in Cisco ANA 3.6 SP1 for the following devices:

- Cisco AS5300 Series Universal Gateways, page 37

For information about the technologies supported by each of these VNEs, see Supported Technologies on Cisco Gateways, page 39.

Cisco AS5300 Series Universal Gateways

This section includes the following information about Cisco AS5300 Series Universal Gateways:

- Cisco AS5300 Series—Supported Software Versions, page 37
- Cisco AS5300 Series—Supported Topologies, page 38
- Cisco AS5300 Series—Supported Modules, page 38
- Cisco AS5300 Series—Supported Technologies, page 39
- Cisco AS5300 Series—Supported Events, page 39

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Gateways in Cisco ANA 3.6 SP1, page 4.

Cisco AS5300 Series—Supported Software Versions

Table 26 lists the supported software versions for Cisco AS5300 Series Universal Gateways in Cisco ANA 3.6 SP1.

Table 26 Supported Software Versions for Cisco AS5300 Series Universal Gateways

Software Version	Certification Level
12.0(3)T1	S
12.1(10a)	S
12.1(11b)	S
12.1(22b)	S

Table 26 Supported Software Versions for Cisco AS5300 Series Universal Gateways

Software Version	Certification Level
12.19(22b)	S
12.3(10c)	S
12.3(3)	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco AS5300 Series—Supported Topologies

The following topologies are supported for Cisco AS5300 Series Universal Gateways in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP

Cisco AS5300 Series—Supported Modules

Table 27 lists the supported modules for Cisco AS5300 Series Universal Gateways in Cisco ANA 3.6 SP1.

Table 27 Supported Modules for Cisco AS5300 Series Universal Gateways

Module Name	Module Description	Certification Level
as5300-8ce1-4t	Octal Port Channelized E1/PRI and 4T Card	S
as5300-amazon2-carrier	Access Server MICA Modem Carrier Card	S
pm-dtd-12m	MICA 12-Modem Module Card	S
cpu-as5300	NA	S
as5300-4ce1	Quad Port Channelized E1/PRI Card	S
as5300-dtd-carrier	Access Server MICA Modem Carrier Card	S
pm-dtd-6m	MICA 6-Modem Module Card	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco AS5300 Series—Supported Technologies, page 39.

Cisco AS5300 Series—Supported Technologies

The following technologies are supported by the Cisco AS5300 Series in Cisco ANA 3.6 SP1:

- Base Logical Components, page 40
- Layer 1, page 41
- IP, page 42
- Ethernet (Physical), page 43
- Physical Equipment, page 44
- ACL, page 44

Cisco AS5300 Series—Supported Events

Table 28 lists the supported service events for Cisco AS5300 Series Universal Gateways in Cisco ANA 3.6 SP1.

Table 28 Service Events for Cisco AS5300 Series Universal Gateways

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
Card up/down	Y

Supported Technologies on Cisco Gateways

The following sections list the objects and attributes that are supported on Cisco gateways in Cisco ANA 3.6 SP1 per technology:

- Base Logical Components, page 40
- Layer 1, page 41

- IP, page 42
- Ethernet (Physical), page 43
- Physical Equipment, page 44
- ACL, page 44

Note For more information about the objects and attributes described in this chapter, see *Cisco Active Network Abstraction Technology Support and Information Model Reference Manual, Version 3.6 Service Pack 1.*

Base Logical Components

Table 29 summarizes base logical component support on Cisco gateways in Cisco ANA 3.6 SP1.

Table 29 Base Logical Component Support on Cisco Gateways

Attribute	AS5300
Managed Element Object (IMO Name—IManagedElement)	
IP Address	Y
Communication State	Y
Investigation State	Y
Element Category	Y
Element Type and Key	Y
Device Name	Y
System Name	Y
System Description	Y
Up Time	Y
Software Version	Y
Vendor Identity	Y
Memory and CPU Usage	Y
Agent Memory	Y
Number of Device Components	
Number of Logical Entries	

Layer 1

Table 30 summarizes Layer 1 attribute support on Cisco gateways in Cisco ANA 3.6 SP1.

Table 30 Layer 1 Attribute Support on Cisco Gateways

Attribute	AS5300
Physical Layer Object (IMO Name—IPhysicalLayer)	
Media Type	Y
Clocking Source	
Maximum Speed	Y
Is Internal Port	Y
Maximum and Minimum Discarded Thresholds	Y
Discarded Bandwidth	
Maximum and Minimum Dropped Thresholds	Y
Dropped Bandwidth	
Maximum and Minimum Input Threshold	Y
Input Bandwidth	
Maximum and Minimum Output Thresholds	Y
Output Bandwidth	
Discarded and Received Input Data Counters	Y
Dropped and Forward Output Data Counters	Y
Administrative Status	Y
Operational Status	Y
Operational Status Date	Y
IANA Type	Y

IP

Table 31 summarizes IP attribute support on Cisco gateways in Cisco ANA 3.6 SP1.

Table 31 IP Attribute Support on Cisco Gateways

Attribute	AS5300
IP Interface Object (IMO Name—IIPInterface)	
IP Address	Y
Subnetwork Mask	Y
IP Interface Addresses	Y
Interface Name	Y
Interface Description	Y
IP Interface State	Y
OSPF Interface Cost	
Broadcast Address	
MTU	Y
Lookup Method	
Address Resolution Type	
ARP Timeout	
Secured ARP	
ICMP Mask Reply	
IGMP Proxy	
HSRP Groups	
IP Multiplexing Table	
IANA Type	
Routing Entry Object (IMO Name—IRoutingEntry)	
Destination IP Subnet	Y
Next Hop IP Address	Y
Type	Y
Routing Protocol Type	Y
Outgoing Interface Name	Y
ARP Entry Object (IMO Name—IARPEntry)	
IP Address	Y
MAC Address	Y
Port	Y
Entry Type	Y

Table 31 IP Attribute Support on Cisco Gateways (continued)

Attribute	AS5300
HSRP Group Entry Object (IMO Name—HSRPGroupEntry)	
Group Number	
Port Description	
Priority	
Coupled Router	
State	
Tracking Interfaces	
Virtual IP Address	
Virtual MAC Address	

Ethernet (Physical)

Table 32 summarizes support for physical Ethernet attributes on Cisco gateways in Cisco ANA 3.6 SP1.

Table 32 Ethernet Physical Attribute Support on Cisco Gateways

Attribute	AS5300
Ethernet Channel Object (IMO Name—IEthernetChannel)	
Channel Group	
Channel Bandwidth	
IANA Type	
Ethernet Interface Object (IMO Name—IEthernet)	
MAC Address	Y
Duplex Mode	
Output Flow Control	
Input Flow Control	
IANA Type	

Physical Equipment

Table 33 summarizes physical equipment support on Cisco gateways in Cisco ANA 3.6 SP1.

Table 33 Physical Equipment Support on Cisco Gateways

Attribute	AS5300
Module/Board Object (IMO Name—Imodule)	
Module Name	Y
Module Description	Y
Software Version	Y
Operational Status	Y
Hardware Type & Version	Y
Managed IP Address	
Redundant Equipment	
Configured Redundancy	
Redundancy Status	
Operational Status Last Changed	
Supported Physical Termination Points	
Serial Number (soft property)	Y
Chassis Object (IMO Name—Ichassis)	
Equipment Holder Type	
Description	
Serial Number	Y

ACL

Table 34 summarizes support for access list (ACL) attributes on Cisco gateways in Cisco ANA 3.6 SP1.

Table 34 ACL Attribute Support on Cisco Gateways

Attribute	AS5300
Access List Entry Object (IMO Name—IAccessListEntry)	
Entry Identification	Y
Action Logic	Y
Source and Destination Address	Y
Source and Destination Wildcard	Y

Table 34 ACL Attribute Support on Cisco Gateways (continued)

Attribute	AS5300
Protocol Type	Y
Source and Destination Port Ranges	Y
Source and Destination Port Action	Y
Protocol Specific Info	Y
Differential Services Code Points	Y
Type of Service	Y
Precedence	Y
Matches	Y

Support Information for Cisco Routers

This chapter contains Virtual Network Element (VNE) support information for Cisco ANA 3.6 SP1 for the following devices:

For information about the technologies supported by each of these VNEs, see Supported Technologies on Cisco Routers, page 123.

Cisco 800 Series Routers

This section includes the following information about Cisco 800 Series routers:

- Cisco 800 Series—Supported Service Events, page 49

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 800 Series—Supported Software Versions

Table 35 lists the supported software versions for Cisco 800 Series routers in Cisco ANA 3.6 SP1.

Table 35 Supported Software Versions for Cisco 800 Series Routers

Software Version	Certification Level
12.0*	S
12.1*	S
12.2(13)ZH4	S
12.2*	S
12.3(8)T11	S
12.3*	S
12.4(10*	S
12.4(5a)	S
12.4(7)	S
12.4(9)T1	S
12.4*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 800 Series—Supported Topologies

The following topologies are supported for Cisco 800 Series routers in Cisco ANA 3.6 SP1:

- MAC
- CDP

Cisco 800 Series—Supported Technologies

The following technologies are supported by the Cisco 800 Series in Cisco ANA 3.6 SP1:

- Base Logical Components, page 124
- Layer 1, page 125

Cisco 800 Series—Supported Service Events

Table 36 lists the supported service events (also called service alarms) for Cisco 800 Series routers in Cisco ANA 3.6 SP1.

Table 36 Service Events for Cisco 800 Series Routers

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Card up/down	Y

Cisco 1000 Series Routers

This section includes the following information about Cisco 1000 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 1000 Series—Supported Software Versions

Table 37 lists the supported software versions for Cisco 1000 Series routers in Cisco ANA 3.6 SP1.

Table 37 Supported Software Versions for Cisco 1000 Series Routers

Software Version	Certification Level
11.*	S
12.1*	S
12.2*	S
12.3*	S
12.4*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 1000 Series—Supported Topologies

The following topologies are supported for Cisco 1000 Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP

Cisco 1000 Series—Supported Technologies

The following technologies are supported by the Cisco 1000 Series in Cisco ANA 3.6 SP1:

- Base Logical Components, page 124
- Layer 1, page 125
- IP, page 126
- Routing Protocols, page 127
- Ethernet (Physical), page 128
- Physical Equipment, page 128
- Ethernet (Logical), page 129
- ATM, page 129
- Frame Relay, page 131
- HDLC, page 132
- ACL, page 136

Cisco 1000 Series—Supported Service Events

Table 38 lists the supported service events (also called service alarms) for Cisco 1000 Series routers in Cisco ANA 3.6 SP1.

Table 38 Service Events for Cisco 1000 Series Routers

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	N
Secondary HSRP interface is active Secondary HSRP interface is not active	N
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N

Cisco 1600 Series Routers

This section includes the following information about Cisco 1600 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 1600 Series—Supported Software Versions

Table 39 lists the supported software versions for Cisco 1600 Series routers in Cisco ANA 3.6 SP1.

Table 39 Supported Software Versions for Cisco 1600 Series Routers

Software Version	Certification Level
12.0(12)	S
12.1*	S
12.2*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 1600 Series—Supported Topologies

The following topologies are supported for Cisco 1600 Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP

Cisco 1600 Series—Supported Technologies

The following technologies are supported by the Cisco 1600 Series in Cisco ANA 3.6 SP1:

- Base Logical Components, page 124
- Layer 1, page 125
- IP, page 126
- Routing Protocols, page 127
- Ethernet (Physical), page 128
- Physical Equipment, page 128
- Ethernet (Logical), page 129
- ATM, page 129
- Frame Relay, page 131
- HDLC, page 132
- ACL, page 136

Cisco 1600 Series—Supported Service Events

Table 40 lists the supported service events (also called service alarms) for Cisco 1600 Series routers in Cisco ANA 3.6 SP1.

Table 40 Service Events for Cisco 1600 Series Routers

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	Y
Secondary HSRP interface is active Secondary HSRP interface is not active	Y
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
BGP Neighbor Down	Y
Card up/down	Y

Cisco 1700 Series Modular Access Routers

This section includes the following information about Cisco 1700 Series routers:

- Cisco 1700 Series—Supported Service Events, page 56

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 1700 Series—Supported Software Versions

Table 41 lists the supported software versions for Cisco 1700 Series routers in Cisco ANA 3.6 SP1.

Table 41 Supported Software Versions for Cisco 1700 Series Routers

Software Version	Certification Level
12.1(3)XP3	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 1700 Series—Supported Topologies

The following topologies are supported for Cisco 1700 Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP
- Physical
- PPP
- Static

Cisco 1700 Series—Supported Modules

Table 42 lists the supported modules for Cisco 1700 Series routers in Cisco ANA 3.6 SP1.

Table 42 Supported Modules for Cisco 1700 Series Routers

Module Name	Module Description	Certification Level
WIC-1SHDSL-V3=	1-port G.shdsl WIC with Four Wire Support (spare & system)	S
WIC-2A/S	dual-serial port WAN Interface Card	S
VWIC-2MFT-T1	2-Port RJ-48 Multiflex Trunk - T1	S

Table 42 Supported Modules for Cisco 1700 Series Routers (continued)

Module Name	Module Description	Certification Level
VWIC-2MFT-E1	2-port RJ-48 Multifled Trunk - E1	S
VWIC-2MFT-T1-DI	2-Port RJ-48 Multiflex Trunk - T1 With Drop and Insert	S
VWIC-2MFT-E1-DI	2-Port RJ-48 Multiflex Trunk - E1 With Drop and Insert	S
WIC-1ENET	1-port ethernet WAN Interface card	S
MPC860	Power PC processor, such as in the Cisco 1700 Series	S
WIC-1DSU-T1	1-port T1/Fractional T1 DSU/CSU WAN Interface card	S
AIM-VPN/BP	DES/3DES VPN Encryption AIM-Base Performance	S
AIM-VPN/BPII	DES/3DES/AES and Layer 3 (IPPCP) Compression VPN Encryption AIM-Base Performance	S
AIM-VPN/EPII	DES/3DES/AES and Layer 3 (IPPCP) Compression VPN Encryption AIM-Enhanced Performance	S
WIC-1DSU-T1-V2	Updated one-port T1/fractional T1 DSU/CSU WIC	S
VWIC-1MFT-E1	1-Port RJ-48 Multiflex Trunk-E1	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 1700 Series—Supported Technologies, page 55.

Cisco 1700 Series—Supported Technologies

The following technologies are supported by the Cisco 1700 Series in Cisco ANA 3.6 SP1:

- ACL, page 136

Cisco 1700 Series—Supported Service Events

Table 43 lists the supported service events (also called service alarms) for Cisco 1700 Series routers in Cisco ANA 3.6 SP1.

Table 43 Service Events for Cisco 1700 Series Routers

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Card up/down	Y

Cisco 1800 Series Integrated Services Routers

This section includes the following information about Cisco 1800 Series routers:

- Cisco 1800 Series—Supported Software Versions, page 57
- Cisco 1800 Series—Supported Topologies, page 57
- Cisco 1800 Series—Supported Modules, page 57
- Cisco 1800 Series—Supported Technologies, page 58
- Cisco 1800 Series—Supported Service Events, page 58

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 1800 Series—Supported Software Versions

Table 44 lists the supported software versions for Cisco 1800 Series routers in Cisco ANA 3.6 SP1.

Table 44 Supported Software Versions for Cisco 1800 Series Routers

Software Version	Certification Level
12.3*	S
12.4*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 1800 Series—Supported Topologies

The following topologies are supported for Cisco 1800 Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP

Cisco 1800 Series—Supported Modules

Table 45 lists the supported modules for Cisco 1800 Series routers in Cisco ANA 3.6 SP1.

Table 45 Supported Modules for Cisco 1800 Series Routers

Module Name	Module Description	Certification Level
WIC-1T	1-Port Serial WIC	S
WIC-2T	2-port serial WIC	S
WIC-1DSU-T1-V2	1-port T1/Fractional-T1 CSU/DSU WIC	S
WIC-1DSU-56K4	1-port 4-wire 56-/64-kbps CSU/DSU WIC	S
WIC-1ADSL(wic-dslsar-20150)	1-port asymmetric DSL (ADSL) over basic telephone service WIC	S
WIC-2AM	2-port analog modem WIC	S
VWIC-2MFT-T1-DI	2-port RJ-48 multiflex trunk-T1 with drop and insert– data only	S
VWIC-2MFT-G703	2-port RJ-48 multiflex trunk-G.703– data only	S
VWIC-2MFT-E1-DI	2-port RJ-48 multiflex trunk-E1 with drop and insert– data only	S

Table 45 Supported Modules for Cisco 1800 Series Routers (continued)

Module Name	Module Description	Certification Level
HWIC-4ESW	4-port 10/100 Ethernet switch interface card	S
AIM-VPN-BP2-PLUS	Virtual Private Network (VPN) Module	S
C1841 Motherboard with 2 Fast Ethernet	C1841 Motherboard with 2 Fast Ethernet	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 1800 Series—Supported Technologies, page 58.

Cisco 1800 Series—Supported Technologies

The following technologies are supported by the Cisco 1800 Series in Cisco ANA 3.6 SP1:

Cisco 1800 Series—Supported Service Events

Table 46 lists the supported service events (also called service alarms) for Cisco 1800 Series routers in Cisco ANA 3.6 SP1.

Table 46 Service Events for Cisco 1800 Series Routers

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	Y
Secondary HSRP interface is active Secondary HSRP interface is not active	Y

Table 46 Service Events for Cisco 1800 Series Routers (continued)

Event Name	Expedited
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	Y
CPU Over Utilized	Y
Memory Over utilize	Y
Device Unsupported	Y
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
Cloud Problem	N
Concurrent Backup and Primary Port	N
Backup Interface Warning	N
BGP Neighbor Down	Y
Card up/down	Y
Primary HSRP interface is not active Primary HSRP interface is active	Y
Secondary HSRP interface is active Secondary HSRP interface is not active	Y

Cisco 2500 Series Routers

This section includes the following information about Cisco 2500 Series routers:

- Cisco 2500 Series—Supported Service Events, page 61

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 2500 Series—Supported Software Versions

Table 47 lists the supported software versions for Cisco 2500 Series routers in Cisco ANA 3.6 SP1.

Table 47 Supported Software Versions for Cisco 2500 Series Routers

Software Version	Certification Level
11.*	S
11.2(18)	S
12.0(17a)	S
12.0*	S
12.1*	S
12.2*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 2500 Series—Supported Topologies

The following topologies are supported for Cisco 2500 Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP

Cisco 2500 Series—Supported Modules

Table 48 lists the supported modules for Cisco 2500 Series routers in Cisco ANA 3.6 SP1.

Table 48 Supported Modules for Cisco 2500 Series Routers

Module Name	Module Description	Certification Level
CPU-2500	Cisco 2500 CPU card	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 2500 Series—Supported Technologies, page 61.

Cisco 2500 Series—Supported Technologies

The following technologies are supported by the Cisco 2500 Series in Cisco ANA 3.6 SP1:

Cisco 2500 Series—Supported Service Events

Table 49 lists the supported service events (also called service alarms) for Cisco 2500 Series routers in Cisco ANA 3.6 SP1.

Table 49 Service Events for Cisco 2500 Series Routers

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	N
Secondary HSRP interface is active Secondary HSRP interface is not active	N
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N

Table 49 Service Events for Cisco 2500 Series Routers (continued)

Event Name	Expedited
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
Broken LSP discovered	N
BGP Neighbor Down	N
Card up/down	Y

Cisco 2600 Series Multiservice Platform Routers

This section includes the following information about Cisco 2600 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 2600 Series—Supported Software Versions

Table 50 lists the supported software versions for Cisco 2600 Series routers in Cisco ANA 3.6 SP1.

Table 50 Supported Software Versions for Cisco 2600 Series Routers

Software Version	Certification Level
11.3(10)T	S
12.0(3)T3	S
12.2(15)T	S
12.2(17a)	S
12.2(8)T5	S

Table 50 Supported Software Versions for Cisco 2600 Series Routers (continued)

Software Version	Certification Level
12.3(17a)	S
12.3(4)*	S
12.4*	S
11.*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 2600 Series—Supported Topologies

The following topologies are supported for Cisco 2600 Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP

Cisco 2600 Series—Supported Modules

Table 51 lists the supported modules for Cisco 2600 Series routers in Cisco ANA 3.6 SP1.

Table 51 Supported Modules for Cisco 2600 Series Routers

Module Name	Module Description	Certification Level
AIM-ATM	AIM(Advanced Integration Module) supporting ATM features for Cisco 2600, 2600XM, 2691, 3660, and 3700	S
WIC-1ADSL	1-port ADSLoPOTS WAN Interface Card (System)	S
VWIC-1MFT-T1	1-Port RJ-48 Multiflex Trunk-T1	S
VWIC-2MFT-T1	2-Port RJ-48 Multiflex Trunk-T1	S
VWIC-2MFT-T1-DI	2-Port RJ-48 Multiflex Trunk-T1 With Drop and Insert	S
VWIC-1MFT-E1	1-Port RJ-48 Multiflex Trunk-E1	S
VWIC-2MFT-E1	2-Port RJ-48 Multiflex Trunk-E1	S
VWIC-2MFT-E1-DI	2-Port RJ-48 Multiflex Trunk-E1 With Drop and Insert	S
NM-1T3/E3	One-port clear-channel T3/E3 network module	S

Table 51 Supported Modules for Cisco 2600 Series Routers (continued)

Module Name	Module Description	Certification Level
NM-1E2W	One-port Ethernet plus two WAN interface card slots	S
NM-1E1RW	One-port Token Ring, one-port Ethernet plus two WAN interface card slots	S
NM-1A-T3) and E3 (NM-1A-E3	DS3/E3 ATM Network Modules for the Cisco 2600, 2800, 3600, 3700 and 3800 Series Routers	S
VIC-4FXS/DID	4-port FXS voice/fax interface card (Note	S
VIC2-2E/M	2-port E&M voice/fax interface card	S
VIC2-2FXS	2-port FXS voice/fax interface card	S
AIM-VOICE-30	AIM supporting voice/fax DSP features	S
VIC-2FXO	Two-port FXO voice/fax interface card [also see VIC-2FXO-M1]	S
WIC-1B-S/T-V3	1-Port ISDN WAN Interface Card (dial and leased line)	S
NM-1FE1CT1-One-port 10/100BaseTX Ethernet with one-port T1 PRI/Channelized	N/A(DESC)	S
NM-2FE2W	2 10/100 Ethernet 2 WAN card slot network module	S
NM-1FE2W	1 10/100 Ethernet 2 WAN card slot network module	S
NM-2FE2W-V2	2 Port 10/100 Ethernet with 2 WAN Card Slot Network	S
NM-1FE2W-V2	1 10/100Ethernet with 2 WAN card Slot Network	S
NM-1FE1R2W	1 10/100 Ethernet 14/16 Token Ring 2 WAN card slot network module	S
NM-2W	2 WIC slot network module, (WAN I/F cards offered separately)	S
NM-1T3/E3(12)	1-port Clear Channel	S
NM-1CE1T1-PRI	1-port Channelized E1/T1/ISDN PRI network module	S
NM-2CE1T1-PRI	2-port Channelized E1/T1/ISDN PRI network module	S
NM-8AM-V2	8-port analog modem network module with V.92	S
NM-16AM-V2	16-port analog modem network module with V.92	S
NM-HDV2	IP Communications high-density digital voice network module	S

Table 51 Supported Modules for Cisco 2600 Series Routers (continued)

Module Name	Module Description	Certification Level
NM-CUE-EC	Cisco Unity Express Network Module Enhanced Capacity	S
NM-AIC-64(6)	Alarm monitoring and control network module; 64 contact points and 16 control points	S
NM-NAM	Network analysis module	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 2600 Series—Supported Technologies, page 65.

Cisco 2600 Series—Supported Technologies

The following technologies are supported by the Cisco 2600 Series in Cisco ANA 3.6 SP1:

Cisco 2600 Series—Supported Service Events

Table 52 lists the supported service events (also called service alarms) for Cisco 2600 Series routers in Cisco ANA 3.6 SP1.

Table 52 Service Events for Cisco 2600 Series Routers

Event Name	Expedited
All ip interfaces down active ip interfaces found	N
interface status down/up	N
card in/out	Y
link down/up	Y
Device Unreachable	N

Table 52 Service Events for Cisco 2600 Series Routers (continued)

Event Name	Expedited
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Card up/down	Y

Cisco 2800 Series Integrated Services Routers

This section includes the following information about Cisco 2800 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 2800 Series—Supported Software Versions

Table 53 lists the supported software versions for Cisco 2800 Series routers in Cisco ANA 3.6 SP1.

Table 53 Supported Software Versions for Cisco 2800 Series Routers

Software Version	Certification Level
12.3(11)T*	S
12.3(8)T*	S
12.3(8)T5	S
12.3(14)T7	S
12.4(12)	S
12.4(3a)	S
12.4(4*	S

Table 53 Supported Software Versions for Cisco 2800 Series Routers (continued)

Software Version	Certification Level
12.4(5a)	S
12.4(7*	S
12.4(8*	S
12.4(10)	S
12.4(1a)	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 2800 Series—Supported Topologies

The following topologies are supported for Cisco 2800 Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP

Cisco 2800 Series—Supported Modules

Table 54 lists the supported modules for Cisco 2800 Series routers in Cisco ANA 3.6 SP1.

Table 54 Supported Modules for Cisco 2800 Series Routers

Module Name	Module Description	Certification Level
NM-1T3E3	1-port clear-channel T3/E3 network module	S
NM-8AM-V2	8-port analog modem network module with v.92	S
NM-16AM-V2	16-port analog modem network module with v.92	S
NM-1CE1T1-PRI	1-port Channelized E1/T1/ISDN PRI network module	S
NM-2CE1T1-PRI	2-port Channelized E1/T1/ISDN PRI network module	S
NM-HD-2V	2-slot IP Communications voice and fax network module	S
NM-HDV2	IP Communications high-density voice and fax network module	S

Table 54 Supported Modules for Cisco 2800 Series Routers (continued)

Module Name	Module Description	Certification Level
NM-CUE-EC	Cisco Unity Express Voice-Mail Network Module extended capacity	S
NM-NAM	network analysis module	S
HWIC-1FE	1-port Fast Ethernet HWIC	S
HWIC-1GE-SFP	Cisco Gigabit Ethernet High-Speed Interface Card	S
HWIC-4T	4-Port serial HWIC	S
HWIC-16A	16-Port Async HWIC	S
HWIC-ADSL-BST	2-port HWIC with 1-port ADSLoPOTS and 1-port ISDN BRI-S/T	S
HWIC-2SHDSL	2-port G.SHDSL HWIC with 2-wire and 4-wire support	S
HWIC-4SHDSL	4-port G.SHDSL HWIC with 2-wire, 4-wire, and 8-wire support	S
WIC-1ADSL	1-port asymmetric DSL (ADSL) over POTS service WIC	S
WIC-1SHDSL-V3	1-port G.SHDSL WIC with 4-wire support	S
VWIC2-1MFT-T1E1	1-Port T1/E1 Voice/WAN with Drop & Insert	S
VWIC-2MFT-T1-DI	2-port RJ-48 multiflex trunk-T1 with drop and insert	S
VWIC-2MFT-E1-DI	2-port RJ-48 multiflex trunk-E1 with drop and insert	S
VWIC-2MFT-G703	2-port RJ-48 multiflex trunk-G.703	S
VIC2-2FXS	2-port VIC-FXS	S
VIC2-2BRI-NTTE	2-port VIC card-BRI (NT and TE)	S
WIC-1AM-V2	1-port analog modem WIC (updated version)	S
WIC-2AM-V2	2-port analog modem WIC (updated version)	S
HWIC-1ADSLI	1-port ADSL over ISDN HWIC	S
HWIC-4ESW	4-port Cisco EtherSwitch 10BASE-T/100BASE-TX autosensing HWIC	S
EM-4BRI-NTTE	4-port BRI voice and fax expansion module	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 2800 Series—Supported Technologies, page 69.

Cisco 2800 Series—Supported Technologies

The following technologies are supported by the Cisco 2800 Series in Cisco ANA 3.6 SP1:

Cisco 2800 Series—Supported Service Events

Table 55 lists the supported service events (also called service alarms) for Cisco 2800 Series routers in Cisco ANA 3.6 SP1.

Table 55 Service Events for Cisco 2800 Series Routers

Event Name	Expedited
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	Y
CPU Over Utilized	Y
Memory Over utilize	Y
Device Unsupported	Y
Module Unsupported	N
Port Flapping	N
Port Down	Y
Card up/down	Y

Cisco 3600 Series Multiservice Platform Routers

This section includes the following information about Cisco 3600 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 3600 Series—Supported Software Versions

Table 56 lists the supported software versions for Cisco 3600 Series routers in Cisco ANA 3.6 SP1.

Table 56 Supported Software Versions for Cisco 3600 Series Routers

Software Version	Certification Level
12.0(0.20)T	S
12.0(3)T3	S
12.0(4)T	S
12.0(5)	S
12.0(5)T1	S
12.0(6.5)T3	S
12.0(7)XK1	S
12.1(20)	S
12.2(12)	S
12.2(4)T1	S
12.2(8)T5	S
12.3*	S
12.4*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 3600 Series—Supported Topologies

The following topologies are supported for Cisco 3600 Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP
- MPLS

Cisco 3600 Series—Supported Modules

Table 57 lists the supported modules for Cisco 3600 Series routers in Cisco ANA 3.6 SP1.

Table 57 Supported Modules for Cisco 3600 Series Routers

Module Name	Module Description	Certification Level
PM-1E	One Port Ethernet	S
PM-C3600-1FE-TX	One port Fastethernet TX	S
NM-2FE-2W	FastEthernet/WAN	S
WIC-SERIAL-1T	WAN Interface Card - Serial (1T)	S
PM-4E	Four Port Ethernet	S
CPU-3600		S
PM-2CE1-UNBALANCED	Two Port Channelized E1/PRI (75 ohm, unbalanced)	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 3600 Series—Supported Technologies, page 71.

Cisco 3600 Series—Supported Technologies

The following technologies are supported by the Cisco 3600 Series in Cisco ANA 3.6 SP1:

Cisco 3600 Series—Supported Service Events

Table 58 lists the supported service events (also called service alarms) for Cisco 3600 Series routers in Cisco ANA 3.6 SP1.

Table 58 Service Events for Cisco 3600 Series Routers

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	N
Secondary HSRP interface is active Secondary HSRP interface is not active	N
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
Cloud Problem	N
Concurrent Backup and Primary Port	N
Backup Interface Warning	N
Broken LSP discovered	N
MPLS Black hole	N

Table 58 Service Events for Cisco 3600 Series Routers (continued)

Event Name	Expedited
Layer 2 Tunnel Down	N
MPLS TE Tunnel Down/Flapping	N
BGP Neighbor Down	N
Card up/down	Y

Cisco 3700 Series Multiservice Access Routers

This section includes the following information about Cisco 3700 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 3700 Series—Supported Software Versions

Table 59 lists the supported software versions for Cisco 3700 Series routers in Cisco ANA 3.6 SP1.

Table 59 Supported Software Versions for Cisco 3700 Series Routers

Software Version	Certification Level
12.4(9)T	S
12.4*	S
12.3*	S
12.2*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 3700 Series—Supported Topologies

The following topologies are supported for Cisco 3700 Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP
- MPLS

Cisco 3700 Series—Supported Modules

Table 60 lists the supported modules for Cisco 3700 Series routers in Cisco ANA 3.6 SP1.

Table 60 Supported Modules for Cisco 3700 Series Routers

Module Name	Module Description	Certification Level
NM-16ESW	16 port 10/100 EtherSwitch NM	S
NM-1FE2W	1 10/100 Ethernet 2 WAN Card Slot Network Module	S
NM-2FE2W	2 10/100 Ethernet 2 WAN Card Slot Network Module	S
NM-2W	2 WAN Card Slot Network Module(no LAN)	S
NM-1T3/E3	1-Port Clear-channel T3/E3 Network Module	S
NM-1HSSI	Single port HSSI network module	S
NM-1CE1T1-PRI	1-Port Channelized T1 / E1 Modules with PRI Network Modules	S
NM-2CE1T1-PRI	2-Port Channelized T1 / E1 Modules with PRI Network Modules	S
VIC-2E/M	Two-port Voice Interface Card - EandM	S
VIC-2FXO	Two-port Voice Interface Card - FXO	S
VIC-2FXS	Two-port Voice Interface Card - FXS	S
VWIC-2MFT-G703	2-Port RJ-48 Multiflex Trunk - G.703	S
VWIC-2MFT-T1	2-Port RJ-48 Multiflex Trunk - T1	S
VWIC-2MFT-E1	2-Port RJ-48 Multiflex Trunk - E1	S
WIC-2AM	Two-port Analog Modem WAN Interface Card	S
WIC-1ADSL-I-DG	1-Port ADSLoISDN WAN Interface Card	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 3700 Series—Supported Technologies, page 75.

Cisco 3700 Series—Supported Technologies

The following technologies are supported by the Cisco 3700 Series in Cisco ANA 3.6 SP1:

Cisco 3700 Series—Supported Service Events

Table 61 lists the supported service events (also called service alarms) for Cisco 3700 Series routers in Cisco ANA 3.6 SP1.

Table 61 Service Events for Cisco 3700 Series Routers

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	Y
Secondary HSRP interface is active Secondary HSRP interface is not active	Y
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	Y
CPU Over Utilized	Y
Memory Over utilize	Y
Device Unsupported	Y
Module Unsupported	Y
Port Down	Y

Table 61 Service Events for Cisco 3700 Series Routers (continued)

Event Name	Expedited
Rx Over utilized	N
Tx Over utilized	N
VPN leak	Y
Broken LSP discovered	Y
MPLS Black hole	Y
Layer 2 Tunnel Down	Y
MPLS TE Tunnel Down/Flapping	Y
BGP Neighbor Down	Y
Card up/down	Y

Cisco 7200 Series Routers

This section includes the following information about Cisco 7200 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 7200 Series—Supported Software Versions

Table 62 lists the supported software versions for Cisco 7200 Series routers in Cisco ANA 3.6 SP1.

Table 62 Supported Software Versions for Cisco 7200 Series Routers

Software Version	Certification Level
IOS 12.0(26)S6	S
IOS 12.0(27)S1	S
IOS 12.0(32)S6	S
IOS 12.1(10)E	S
IOS 12.1(19)E6	S

Table 62 Supported Software Versions for Cisco 7200 Series Routers (continued)

Software Version	Certification Level
IOS 12.1(1a)	S
IOS 12.2(12)	V
IOS 12.2(15)B	V
IOS 12.2(15)T5	V
IOS 12.2(18.2)	V
12.2(31)SB3x	S
IOS 12.2(33)SRA	V
IOS 12.2(34.*	S
IOS 12.2(37*	S
IOS 12.2(40*	S
IOS 12.3(10)	V
IOS 12.3(12.10)	V
IOS 12.3(15a)	V
IOS 12.3(3)B1	V
IOS 12.3(7)XI7a	V
IOS 12.3*	S
IOS 12.4*	S
IOS 11.3(7)T	V
IOS 12.0(22)S5	V
IOS 12.0(23)S3.0619	V
IOS 12.0(23)S4	V
IOS 12.0(23)S6	V
IOS 12.0(23)S6.0412	V
IOS 12.0(24)S3	V
IOS 12.0(25)S2	V
IOS 12.0(26)S4	V
IOS 12.0(26)S5	V
IOS 11.3(7)T	V
IOS 12.0(26)S6	V
IOS 12.0(27)S1	V
IOS 12.4(11)T1	V

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 7200 Series—Supported Topologies

The following topologies are supported for Cisco 7200 Series routers in Cisco ANA 3.6 SP1:

- ATM counters
- IP
- Ethernet
- CDP
- MPLS

Cisco 7200 Series—Supported Modules

Table 63 lists the supported modules for Cisco 7200 Series routers in Cisco ANA 3.6 SP1.

Table 63 Supported Modules for Cisco 7200 Series Routers

Module Name	Module Description	Certification Level
CX-FEIP-1FX	1-port fast ethernet interface processor (100FX)	S
FEIP2-DSW	2-Port Fast Ethernet IP with Dist. Switching	S
PA-FE-TX	1-Port Fast Ethernet 100BaseTx Port Adapter	S
PA-4R-DTR	4-port dedicated Token Ring, 4/16 Mbps, half duplex(HDX) or full duplex (FDX)	S
PA-2T3+	Two-port clear-channel DS3 port adap	S
VIP2-50	VIP2; Model 50	S
GEIP	Gigabit Ethernet Interface Processor	S
PA-4R-DTR	4-port Token Ring Port Adapter	S
PA-8E	8-Port 10BaseT Ethernet Port Adapter	S
PA-4E	4-Port 10BaseT Ethernet Port Adapter	S
NPE-100	Cisco 7200 Series Network Processing Engine 100	S
NSE-1	Cisco 7200 Series Network Services Engine, NSE-1	S
NPE-150	Cisco 7200 Series Network Processing Engine 150	S
NPE-200	Network Processing Engine NPE-200	S
NPE-300	Network Processing Engine NPE-300	S
NPE-225	Cisco 7200 Network Processing Engine NPE-225	S
C7200-I/O-GE+E	Cisco 7200 Series 1-Port Gigabit Ethernet and 1-Port Ethernet Input/Output Controller	S
C7200-I/O-2FE/E	Cisco 7200 Series 2-Port 10/100 Auto-Sensing Fast Ethernet Input/Output Controller	S

Table 63 Supported Modules for Cisco 7200 Series Routers (continued)

Module Name	Module Description	Certification Level
ATM WAN OC3+ (MM) /PA-A1	ATM WAN OC3+ (MM) Port adapter, 1 port. Port adapter	S
C7200-IO	I/O controller with no Ethernet port	S
NPE-400	Cisco 7200VXR Network Processing Engine NPE-400, including 256 MB SDRAM	S
NPE-G1	Cisco 7200 Series NPE-G1 including 256 MB default DRAM and 64 MB default flash memory	S
PA-MC-8E1	8-port MultiChannel E1 Port Adapter	S
PA-MC-E3	1-port MultiChannel E3 Port Adapter	S
PA-MC-2T	2-port multichannel T1 with integrated channel service units (CSUs)/DSUs	S
PA-2FE-TX	2-Port Fast Ethernet 100Base TX Port Adapter	S
PA-T3	One-port clear-channel DS3 port adapter	S
PA-POS-OC3SMI	Single-Mode Intermediate Reach PoS, OC3 Port Adapter	S
PA-POS-OC3MM	MultiMode PoS, OC3 Port Adapter	S
PA-POS-OC3SML	Single-Mode Long Reach PoS, OC3 Port Adapter	S
PA-MC-2T	Two-port enhanced multichannel T3 port adapter	S
PA-A6-OC3SMI	1-Port Enhanced ATM OC3c/STM1 Singlemode (IR) Port Adapter	S
PA-FE-FX	1-Port Fast Ethernet 100BaseFx Port Adapter	S
RSP4	Route Switch Processor 4	S
PA-MC-8TE1	8 port multichannel T1/E1 8PRI port adapter	S
CX-CIP2-ECAP1	Second-generation Channel Interface Processor with single ESCON channel and single parallel channel	S
VIP6-80	Services Accelerator Versatile Interface Processor 6-80	S
PA-MC-2E1/120	2-Port Multichannel E1/PRI Port Adapter	S
PA-MC-T3	Single port enhanced multichannel T3 port adapter	S
CX-FEIP-1FX	1-port fast ethernet interface processor (100TX)	S
PA-A3-OC3SML	Single port ATM OC3c/STM1 Single Mode (LR) Port Adapter	S
PA-A3-OC3SMI	Single port ATM OC3c/STM1 Single Mode (IR) Port Adapter	S
PA-A3-OC3MM	Single port ATM OC3c/STM1 Multi Mode Port Adapter	S

Table 63 Supported Modules for Cisco 7200 Series Routers (continued)

Module Name	Module Description	Certification Level
OSM-1OC48-POS-SI	1-port OC-48/STM-16 SONET/SDH enhanced OSM, single-mode, intermediate-reach with 4 GE	S
WS-X6582-2PA	Enhanced FlexWAN Module, Fabric-enabled	S
WS-X6582-2PA	FlexWAN Module	S
PA-GE	Gigabit Ethernet Port Adapter	S
PA-8T1	8-port channelized T1	S
PA-chSTM1	4 port channelized STM-1 card	S
PA-MC-STM1-SMI		S
PA-MC-T3-EC	Enhanced 1 port multichannel PA	S
PA-POS-2OC3	2 Port Packet/SONET OC3c/STM1 Port Adapter	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 7200 Series—Supported Technologies, page 80.

Cisco 7200 Series—Supported Technologies

The following technologies are supported by the Cisco 7200 Series in Cisco ANA 3.6 SP1:

Cisco 7200 Series—Supported Service Events

Table 64 lists the supported service events (also called service alarms) for Cisco 7200 Series routers in Cisco ANA 3.6 SP1.

Table 64 Service Events for Cisco 7200 Series Routers

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	N
Secondary HSRP interface is active Secondary HSRP interface is not active	N
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
Cloud Problem	N
Broken LSP discovered	N
MPLS Black hole	N
Layer 2 Tunnel Down	N
MPLS TE Tunnel Down/Flapping	N
BGP Neighbor Down	N
Card up/down	Y

Cisco 7400 Series Routers

This section includes the following information about Cisco 7400 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 7400 Series—Supported Software Versions

Table 65 lists the supported software versions for Cisco 7400 Series routers in Cisco ANA 3.6 SP1.

Table 65 Supported Software Versions for Cisco 7400 Series Routers

Software Version	Certification Level
IOS 12.0(32)S6	S
IOS 12.1(10)E	S
IOS 12.1(19)E6	S
IOS 12.1(1a)	S
IOS 12.2(12)	S
IOS 12.2(15)B	S
IOS 12.2(15)T5	S
IOS 12.2(18.2)	S
IOS 12.2(31)SB3x	S
IOS 12.2(34.*	S
IOS 12.3(10)	S
IOS 12.3(12.10)	S
IOS 12.3(15a)	S
IOS 12.3(3)B1	S
IOS 12.3(7)XI7a	S
IOS 12.3*	S
IOS 12.4*	S
IOS 12.0(22)S5	S
IOS 12.0(23)S3.0619	S
IOS 12.0(23)S4	S

Table 65 Supported Software Versions for Cisco 7400 Series Routers (continued)

Software Version	Certification Level
IOS 12.0(23)S6	S
IOS 12.0(23)S6.0412	S
IOS 12.0(24)S3	S
IOS 12.0(25)S2	S
IOS 12.0(26)S4	S
IOS 12.0(26)S5	S
IOS 11.3(7)T	S
IOS 12.0(26)S6	S
IOS 12.0(27)S1	S
IOS 12.4(11)T1	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 7400 Series—Supported Topologies

The following topologies are supported for Cisco 7400 Series routers in Cisco ANA 3.6 SP1:

- IP
- Ethernet
- CDP
- MPLS

Cisco 7400 Series—Supported Modules

Table 66 lists the supported modules for Cisco 7400 Series routers in Cisco ANA 3.6 SP1.

Table 66 Supported Modules for Cisco 7400 Series Routers

Module Name	Module Description	Certification Level
PA-FE-TX	1-Port Fast Ethernet 100BaseTx Port Adapter	S
PA-4R-DTR	4-port dedicated Token Ring, 4/16 Mbps, half duplex(HDX) or full duplex (FDX)	S
PA-2T3	Two-port clear-channel DS3 port adap	S
PA-4R-DTR	4-port Token Ring Port Adapter	S
PA-8E	8-Port 10BaseT Ethernet Port Adapter	S

Table 66 Supported Modules for Cisco 7400 Series Routers (continued)

Module Name	Module Description	Certification Level
PA-4E	4-Port 10BaseT Ethernet Port Adapter	S
PA-MC-8E1	8-port MultiChannel E1 Port Adapter	S
PA-MC-E3	1-port MultiChannel E3 Port Adapter	S
PA-MC-2T	2-port multichannel T1 with integrated channel service units (CSUs)/DSUs	S
PA-2FE-TX	2-Port Fast Ethernet 100Base TX Port Adapter	S
PA-T3	One-port clear-channel DS3 port adapter	S
PA-POS-OC3SMI	Single-Mode Intermediate Reach PoS, OC3 Port Adapter	S
PA-POS-OC3MM	MultiMode PoS, OC3 Port Adapter	S
PA-POS-OC3SML	Single-Mode Long Reach PoS, OC3 Port Adapter	S
PA-MC-2T	Two-port enhanced multichannel T3 port adapter	S
PA-A6-OC3SMI	1-Port Enhanced ATM OC3c/STM1 Singlemode (IR) Port Adapter	S
PA-FE-FX	1-Port Fast Ethernet 100BaseFx Port Adapter	S
PA-MC-8TE1	8 port multichannel T1/E1 8PRI port adapter	S
PA-MC-2E1/120	2-Port Multichannel E1/PRI Port Adapter	S
PA-MC-T3	Single port enhanced multichannel T3 port adapter	S
PA-A3-OC3SML	Single port ATM OC3c/STM1 Single Mode (LR) Port Adapter	S
PA-A3-OC3SMI	Single port ATM OC3c/STM1 Single Mode (IR) Port Adapter	S
PA-A3-OC3MM	Single port ATM OC3c/STM1 Multi Mode Port Adapter	S
PA-GE	Gigabit Ethernet Port Adapter	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 7400 Series—Supported Technologies, page 84.

Cisco 7400 Series—Supported Technologies

The following technologies are supported by the Cisco 7400 Series in Cisco ANA 3.6 SP1:

Cisco 7400 Series—Supported Service Events

Table 67 lists the supported service events (also called service alarms) for Cisco 7400 Series routers in Cisco ANA 3.6 SP1.

Table 67 Service Events for Cisco 7400 Series Routers

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	N
Secondary HSRP interface is active Secondary HSRP interface is not active	N
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N

Table 67 Service Events for Cisco 7400 Series Routers (continued)

Event Name	Expedited
Cloud Problem	N
Broken LSP discovered	N
MPLS Black hole	N
Layer 2 Tunnel Down	N
MPLS TE Tunnel Down/Flapping	N
BGP Neighbor Down	N
Card up/down	Y

Cisco 7600 Series Routers

This section includes the following information about Cisco 7600 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 7600 Series—Supported Software Versions

Table 68 lists the supported software versions for Cisco 7600 Series routers in Cisco ANA 3.6 SP1.

Table 68 Supported Software Versions for Cisco 7600 Series Routers

Software Version	Certification Level
IOS 12.1(20)E3	S
IOS 12.2(18)SXD	V
IOS 12.2(18)SXD2	S
IOS 12.2(18)SXD5	V
IOS 12.2(18)SXE6b	V
IOS 12.2(33)SRA	V
IOS 12.2(33)SRA2	V

Table 68 Supported Software Versions for Cisco 7600 Series Routers (continued)

Software Version	Certification Level
IOS 12.2(33)SRB	V
IOS 12.2(18)SXE*	S
IOS 12.2(18)SXF*	S
IOS 12.2(33*	S
IOS 12.3*	S
IOS 12.4*	S
IOS 12.2(18)SXE	S
IOS 12.2(33)SRB1	S
IOS 12.1(13)E6	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 7600 Series—Supported Topologies

The following topologies are supported for Cisco 7600 Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP
- MPLS

Cisco 7600 Series—Supported Modules

Table 69 lists the supported modules for Cisco 7600 Series routers in Cisco ANA 3.6 SP1.

Table 69 Supported Modules for Cisco 7600 Series Routers

Module Name	Module Description	Certification Level
7600-ES20	Cisco 7600 Series Ethernet Services Card	S
7600-ES20-10G3C	Cisco 7600 ES20 line card, 2x10GE XFP with DFC 3C	S
7600-ES20-10G3CXL	Cisco 7600 ES20 line card, 2x10GE XFP with DFC 3CXL	S
7600-ES20-GE3C	Cisco 7600 ES20 line card, 20xGE SFP with DFC 3C	S

Table 69 Supported Modules for Cisco 7600 Series Routers (continued)

Module Name	Module Description	Certification Level
7600-ES20-GE3CXL	Cisco 7600 ES20 line card, 20xGE SFP with DFC 3CXL	S
7600-ES20-PROC	7600 ES20 PROC FRU	S
7600-MSFC4	c7600 MSFC4 Daughterboard	S
7600-SIP-200	SPA Interface Processor-200	S
7600-SIP-400	SPA Interface Processor-400	S
7600-SIP-600	SPA Interface Processor-600	S
OSM-12CT3T1	12-port channelized/unchannelized CT3-T1	S
OSM-1CHOC12T3-SI	1-port channelized OC-12, SM-IR	S
OSM-1OC48-POS-SI+	Enhanced 1-port OC-48/STM-16 SONET/SDH OSM, SM-IR	S
OSM-1OC48-POS-SL+	Enhanced 1-port OC-48/STM-16 SONET/SDH OSM, SM-LR	S
OSM-1OC48-POS-SS+	Enhanced 1-port OC-48/STM-16 SONET/SDH OSM, SM-SR	S
OSM-2+4GE-WAN+	4-port Gigabit Ethernet WAN (GBIC) with two Layer 2 LAN ports; CEF256	S
OSM-2OC12-ATM-MM+	Enhanced 2-port OC-12/STM-4 ATM OSM, MM	S
OSM-2OC12-ATM-SI+	Enhanced 2-port OC-12/STM-4 ATM OSM, SM-IR	S
OSM-2OC12-POS-SI+	Enhanced 2-port OC-12c/STM-4c POS, SM-IR; CEF256	S
OSM-4OC12-POS-SI+	Enhanced 4-port OC-12c/STM-4c POS, SM-IR; CEF256	S
OSM-4OC3-POS-SI+	Enhanced 4-port OC-3c/STM-1c POS, SM-IR;	S
PA-1FE-TX, -FX	1-port Fast Ethernet port adapter	S
PA-2FE-TX, -FX	2-port Fast Ethernet port adapter	S
PA-4T+	T1/E1 port adapters	S
PA-A3-E3	ATM with traffic shaping port adapters	S
PA-A3-T3	ATM with traffic shaping port adapters	S
PA-MC-4T1	T1/E1 port adapters	S
PA-MC-8T1	T1/E1 port adapters	S
PA-MC-STM-1	Multichannel STM-1 port adapters	S
PA-POS-2OC3	2-port POS OC3c/STM1 port adapter	S
SFP-OC3-IR1	Intermediate range, single-mode fiber	S
SFP-OC3-LR1	Long range, single-mode fiber	S
SFP-OC3-MM	Short range, multimode fiber	S

Table 69 Supported Modules for Cisco 7600 Series Routers (continued)

Module Name	Module Description	Certification Level
SPA-10X1GE	10-port Gigabit Ethernet SPA, SFP Optics	S
SPA-10X1GE-V2	10-port Gigabit Ethernet SPA, SFP Optics	S
SPA-1XCHSTM1/OC3	1-port Channelized STM1/OC3 to DS0 SPA	S
SPA-1XOC12-ATM	1-Port OC-12c/STM-4c ATM SPA	S
SPA-1XOC12-POS	1-port OC-12c/STM-4c POS SPA	S
SPA-1XOC48-ATM	1 port OC-48c/STM-16 ATM SPA	S
SPA-1XTENGE-XFP	1-port 10 Gigabit Ethernet SPA, LANPHY XFP Optics	S
SPA-24CHT1-CE-ATM	24-Port Channelized T1/E1/J1 ATM CEoP SPA	S
SPA-2X1GE	2-port Gigabit Ethernet SPA, SFP Optics	S
SPA-2X1GE-V2	2-port Gigabit Ethernet SPA, SFP Optics	S
SPA-2XCT3/DS0	2-port Channelized T3 to DS0 SPA	S
SPA-2XOC3-ATM	2-port OC-3c/STM-1c ATM SPA	S
SPA-2XOC3-POS	2-port OC-3c/STM-1c POS SPA	S
SPA-2XOC48POS/RPR	1-port 10 Gigabit Ethernet Shared Port Adapter XFP based	S
SPA-2XOC48POSRPR	2 port OC-48 POS/RPR SPA with SFP Optics	S
SPA-2XT3/E3	2-port Clear Channel T3/E3 SPA	S
SPA-4X1FE-TX-V2	4-port 10/100 Ethernet SPA TX	S
SPA-4XCT3/DS0	4-port Channelized T3 to DS0 SPA	S
SPA-4XOC3-ATM	4-port OC-3c/STM-1c ATM SPA	S
SPA-4XOC3-POS	4-port OC-3c/STM-1c POS SPA	S
SPA-4XOC48POSRPR	4-port OC-48c/STM-16 POS/DPT/RPR SPA	S
SPA-4XT3/E3	4-port Clear Channel T3/E3 SPA	S
SPA-5X1GE	5-port Gigabit Ethernet SPA, SFP Optics	S
SPA-8X1FE-TX-V2	8-port 10/100 Ethernet SPA TX	S
SPA-8XCHT1E1	8-Port Channelized T1/E1 SPA	S
SPA-OC192POS-LR	1-port OC-192c/STM-64 POS/RPR SPA, SM-LR	S
SPA-OC192POS-XFP	1-port OC-192c/STM-64 POS/RPR SPA, XFP Optics	S
WS-C6509-E-FAN	High-capacity fan tray	S
WS-C6509-NEB-A	Enhanced 9-slot vertically oriented chassis	S
WS-CAC-6000W	6000W AC power supply	S
WS-F6700-DFC3BXL	Distributed Forwarding Card 3BXL (DFC3BXL) for use on CEF720 modules	S

Table 69 Supported Modules for Cisco 7600 Series Routers (continued)

Module Name	Module Description	Certification Level
WS-F6700-DFC3C	Distributed Forwarding Card 3C (DFC3C) for use on CEF720 modules	S
WS-F6700-DFC3CXL	Distributed Forwarding Card 3CXL (DFC3CXL) for use on CEF720 modules	S
WS-F6K-FE48X2-AF	IEEE 802.3af PoE daughtercard	S
WS-F6K-GE48-AF	IEEE 802.3af PoE daughtercard	S
WS-F6K-MSFC2	Multilevel Switching Feature Card Version 2 for Catalyst 6000 that is treated as a standalone system by the NMS	S
WS-F6K-PFC2	Catalyst 6500 L3 switching engine II	S
WS-F6K-PFC3BXL	Policy Feature Card 3BXL (PFC3BXL)	V
WS-F6K-PFC3CXL	Policy Feature Card 3CXL (PFC3CXL)	S
WS-F6K-VPWR	PoE Daughtercard	S
WS-F6K-VPWR-GE	PoE Daughtercard	S
WS-G6483	10GBASE-ER serial 1550 nm extended-reach OIM	S
WS-G6488	10GBASE-LR serial 1310 nm long-reach OIM	S
WS-SUP32-10GE-3B	Supervisor Engine 32	S
WS-SUP32-GE-3B	Supervisor Engine 32	S
WS-SUP720-3B	Supervisor Engine 720 with PFC3B	V
WS-SUP720-3BXL	Supervisor Engine 720 with PFC3BXL	V
WS-SVC-IDS2-BUN-K9	Cisco Catalyst 6500 Series Intrusion Detection System (IDSM-2) Service Module	S
WS-SVC-MWAM-1	Multi-Processor WAN Application Module	S
WS-SVC-NAM-1	Network Analysis module 1	S
WS-SVC-NAM-2	Network Analysis module 2	S
WS-X6148A-GE-TX	48 port 10/100/1000 RJ-45 Ethernet Switching Module	S
WS-X6148A-RJ-45	48 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S
WS-X6148-FE-SFP	48 port 100BASE-FX Fast Ethernet Switching Module	S
WS-X6148-GE-TX	48 port 10/100/1000 RJ-45 Ethernet Switching Module	S
WS-X6148-RJ-21	48 port 10/100TX RJ-21 Ethernet/Fast Ethernet Switching Module	S
WS-X6148-RJ-45	48 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S

Table 69 Supported Modules for Cisco 7600 Series Routers (continued)

Module Name	Module Description	Certification Level
WS-X6148X2-RJ-45	96 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S
WS-X6196-RJ-21	96 port 10/100TX RJ-21 Ethernet/Fast Ethernet Switching Module	S
WS-X6248A-TEL	48 port 10/100TX RJ-21 Enhanced Ethernet/Fast Ethernet Switching Module	S
WS-X6248-RJ-45	48 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S
WS-X6248-TEL	48 port 10/100TX RJ-21 Ethernet/Fast Ethernet Switching Module	S
WS-X6316-GE-TX	16-port Gigabit Ethernet RJ-45	S
WS-X6324-100FX-SM	24 port 100FX SingleMode Fast Ethernet Switching Module	S
WS-X6348-RJ-21	6500 48 port 10/100BaseTX (RJ-21)	S
WS-X6348-RJ-45	48 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S
WS-X6408A-GBIC	8-port Gigabit Ethernet GBIC Enhanced QoS Module	S
WS-X6408-GBIC	8-port Gigabit Ethernet GBIC	S
WS-X6416-GBIC	16-port Gigabit Ethernet GBIC	S
WS-X6502-10GE	1-port 10-Gigabit Ethernet	S
WS-X6516A-GBIC	16-port Gigabit Ethernet GBIC	S
WS-X6516-GBIC	16-port Gigabit Ethernet GBIC	S
WS-X6516-GE-TX	16 port 10/100/1000 Base-T Ethernet Switching Module	S
WS-X6548-GE-TX	48 port 10/100/1000 RJ-45 Ethernet Switching Module	S
WS-X6548-RJ-21	48 port 10/100TX RJ-21 Ethernet/Fast Ethernet Switching Module	S
WS-X6548-RJ-45	48 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S
WS-X6582-2PA	Enhanced FlexWAN Module;	S
WS-X6700-CFC	Centralized Forwarding Card	S
WS-X6704-10GE	4-port 10-Gigabit Ethernet	S
WS-X6724-SFP	24-port Gigabit Ethernet SFP	S
WS-X6748-GE-TX	48 port 10/100/1000 RJ-45 Ethernet Switching Module	S
WS-X6748-SFP	48-port Gigabit Ethernet SFP	S
WS-X6816-GBIC	16-port Gigabit Ethernet GBIC	S

Table 69 Supported Modules for Cisco 7600 Series Routers (continued)

Module Name	Module Description	Certification Level
XENPAK-10GB-ER	10GBASE-ER Serial 1550-nm extended-reach, single-mode fiber (SMF), dispersion-shifted fiber (DSF)	S
XENPAK-10GB-SR	10GBASE-SR Serial 850-nm short-reach multimode fiber (MMF)	S
WS-6700-DFC3B	Catalyst 6500 Distributed forwarding card 3B	S
WS-6700-DFC3BXL	Catalyst 6500 Distributed forwarding card 3B XL	S
WS-X6148FE-SFP	Catalyst 6500 48 port 100Base-X SFP module	S
WS-X6K-S1A-MSFC2	Catalyst 6000 Supervisor Engine 1A, 2 Gigabit Ethernet, plus MSFC2 and policy feature card (PFC)	S
WS-X6K-SUP2-2GE	Supervisor 2 with 2 Gigabit Ethernet ports	S
WS-F6700-DFC3A	Distributed Forwarding Card 3	S
cevFan	Fan	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 7600 Series—Supported Technologies, page 92.

Cisco 7600 Series—Supported Technologies

The following technologies are supported by the Cisco 7600 Series in Cisco ANA 3.6 SP1:

- Q-in-Q (Routed Switch), page 138
- STP, page 138

Cisco 7600 Series—Supported Service Events

Table 70 lists the supported service events (also called service alarms) for Cisco 7600 Series routers in Cisco ANA 3.6 SP1.

Table 70 Service Events for Cisco 7600 Series Routers

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	N
Secondary HSRP interface is active Secondary HSRP interface is not active	N
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
Cloud Problem	N
Broken LSP discovered	N
MPLS Black hole	N
Layer 2 Tunnel Down	N
MPLS TE Tunnel Down/Flapping	N
BGP Neighbor Down	N
Card up/down	Y

Cisco 10000 Series Routers

This section includes the following information about Cisco 10000 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 10000 Series—Supported Software Versions

Table 71 lists the supported software versions for Cisco 10000 Series routers in Cisco ANA 3.6 SP1.

Table 71 Supported Software Versions for Cisco 10000 Series Routers

Software Version	Certification Level
12.2(31)SB	S
12.3(7)XI7b	S
12.0(20)	S
12.2(24)S	S
12.2(24)S4	S
11.3*	S
12.0*	S
12.1*	S
12.2*	S
12.0(23)S*	V
12.0(22)S5	V
12.2(18.2)	V
12.1(10)E	V

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 10000 Series—Supported Topologies

The following topologies are supported for Cisco 10000 Series routers in Cisco ANA 3.6 SP1:

- ATM counters
- IP
- Ethernet
- CDP
- MPLS
- BGP
- Layer 2 Tunnels
- Physical
- PPP
- Static
- VRF

Cisco 10000 Series—Supported Modules

Table 72 lists the supported modules for Cisco 10000 Series routers in Cisco ANA 3.6 SP1.

Table 72 Supported Modules for Cisco 10000 Series Routers

Module Name	Module Description	Certification Level
ESR-4OC3-ATM-SM	4-port OC-3/STM-1 ATM, single mode	S
ESR-1GE	1-port Gigabit Ethernet	S
ESR-HH-1GE	1-port Gigabit Ethernet half-height	S
ESR-HH-8FE-TX	8-port Fast Ethernet half-height	S
ESR-1OC-12-ATM	1-port OC-12 ATM	S
ESR-24CT1/E1	24-port channelized E1/T1	S
ESR-6OC3/P-SMI	6-port OC-3c/STS-3c/STM-1 POS/SDH, single mode,intermediate reach	S
ESR-6CT3	6-port channelized T3	S
ESR-1OC-12/P-SMI	1-port OC-12/STS-12c/STM-4 OS/SDH, single mode,intermediate reach	S
ESR-PRE1	Cisco 10K Performance Routing Engine-1	S
ESR-PRE2	Cisco 10K Performance Routing Engine-2	S
ESR-PRE3	Cisco 10K Performance Routing Engine-3	S
ESR-1COC12-SMI	Cisco 10K 1 port channelized OC12	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 10000 Series—Supported Technologies, page 96.

Cisco 10000 Series—Supported Technologies

The following technologies are supported by the Cisco 10000 Series in Cisco ANA 3.6 SP1:

Cisco 10000 Series—Supported Service Events

Table 73 lists the supported service events (also called service alarms) for Cisco 10000 Series routers in Cisco ANA 3.6 SP1.

Table 73 Service Events for Cisco 10000 Series Routers

Event Name	Expedited
Primary HSRP interface inactive/ active	N
Secondary HSRP interface inactive/ active	N
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N

Table 73 Service Events for Cisco 10000 Series Routers (continued)

Event Name	Expedited
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
Cloud Problem	N
Broken LSP discovered	N
MPLS Black hole	N
Layer 2 Tunnel Down	N
MPLS TE Tunnel Down/Flapping	N
BGP Neighbor Down	N
Card up/down	Y

Cisco 12000 Series Routers

This section includes the following information about Cisco 12000 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco 12000 Series—Supported Software Versions

Table 74 lists the supported software versions for Cisco 12000 Series routers in Cisco ANA 3.6 SP1.

Table 74 Supported Software Versions for Cisco 12000 Series Routers

Software Version	Certification Level
IOS 12.0(23)S3	V
IOS 12.0(26)S	V
IOS 12.0(26)S1	V
IOS 12.0(26)S2	V
IOS 12.0(26)S3	V
IOS 12.0(26)S4	V
IOS 12.0(26)S5	V
IOS 12.0(26)S6	V
IOS 12.0(31)S	V
IOS 12.0(31)S3	V
IOS 12.0(32)SY	V
IOS 12.0(32)SY2	V
IOS 12.0(27*	S
IOS 12.0(28*	S
IOS 12.0(30*	S
IOS 12.0(31*	S
IOS 12.0(32*	S
IOS 12.1*	S
IOS 12.2*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco 12000 Series—Supported Topologies

The following topologies are supported for Cisco 12000 Series routers in Cisco ANA 3.6 SP1:

- ATM counters
- IP
- MAC
- CDP
- MPLS

Cisco 12000 Series—Supported Modules

Table 75 lists the supported modules for Cisco 12000 Series routers in Cisco ANA 3.6 SP1.

Table 75 Supported Modules for Cisco 12000 Series Routers

Module Name	Module Description	Certification Level
12000-SIP-401	Cisco 12000 Series SPA Interface Processor-401	S
12000-SIP-501	Cisco 12000 Series SPA Interface Processor-501	S
12000-SIP-600	Cisco 12000 Series SPA Interface Processor-600	S
12000-SIP-601	Cisco 12000 Series SPA Interface Processor-601	S
12DS3-SMB	24 Port Copper DS3 Interface Line Card	V
16OC3X/POS-IR-LC-B	GSR 16-Port OC3/POS MM/I Eng3 Release B = 16OC3X/POS-<>-<>-B	S
16OC3X/POS-I-LC-B	GSR16-Port OC3/POS MM/I Eng3 Release B	S
16OC3X/POS-M-MJ-B	GSR16-Port OC3/POS MM/I Eng3 Release B	S
16-OC3X/POS-IR-LC	16-Port Packet-Over-SONET OC-3/STM-1 with Extended Feature Set Line Card (concatenated)	V
1X10GE-ER-SC	1 Port 10Giga Ethernet Line Card	S
1X10GE-LR-SC	1 Port 10Giga Ethernet Line Card	S
3GE-GBIC-SC	4 Port Gigabit Ethernet Line Card (trident)	V
4GE-SFP-LC	4 port-GE line card for Cisco 12000	S
4OC12/POS-IR-SC-B	Enhanced 4 port OC-12 Intermediate Reach Line Card	V
4OC12X/ATM-IR-SC	4-port OC12/STM4 ATM SM-IR ISE LC with SC connector	N
4OC12X/ATM-MM-SC	4-port OC12/STM4 ATM MM ISE LC with SC connector	N
4OC12X/POS-I-SC-B	4 Port OC12 SM Intermediate Reach POS	V
4OC12X/POS-I-SC-B	4 PORT OC12 POS B	S
4OC12X/POS-M-SC-B	5 port (Quad) OC-12 POS Card, Single Mode, Short Reach	V
4OC3/ATM-IR-SC	4 port OC3/STM1 ATM line MM/IR card	S
4OC3/ATM-MM-SC	4 port OC3/STM1 ATM line MM/IR card	S
4OC3X/POS-IR-LC-B	GSR 4-port OC3/POS IR Eng3 release B	S
4OC3X/POS-LR-LC-B	GSR 4-port OC3/POS IR Eng3 release B	S
4OC3X/POS-MM-MJ-B	GSR 4-port OC3/POS IR Eng3 release B	S
4OC48E/POS-LR-SC	5 Port (Quad) Enhanced OC-48 Long Reach FC Connector Line Card	V
4OC48E/POS-SR-SC	5 Port (Quad) Enhanced OC-48 Short Reach SC Connector Line Card	V

Table 75 Supported Modules for Cisco 12000 Series Routers (continued)

Module Name	Module Description	Certification Level
4XOC48POS/RPR	4-port OC48/STM16 POS/RPR Shared Port Adapter = SPA-4XOC48POS/RPR	S
6CT3-SMB	18 Port Copper DS3 Interface Line Card	V
8FE-FX-SC	8-Port Fast Ethernet Line Card	V
8FE-TX-RJ45	8-Port Fast Ethernet Line Card	V
8FE-TX-RJ45-B	8-port 100baseTX, RJ45 connector type, version B	S
8OC3X/POS-IR-LC-B	GSR 8-Port OC3/POS MM/IR Eng3 Release B	S
8OC3X/POS-MM-MJ-B	GSR 8-Port OC3/POS MM/IR Eng3 Release B	S
8X1FE-V2	8-port Fast Ethernet Shared Port Adapter V2 = SPA-8X1FE-V2	S
BUS_BOARD	GSR16 BUS BOARD (16) =	S
CHOC12/DS1-IR-SC	Cisco 12000 Series 1-Port Channelized OC-12c/STM-4	V
COPPER-12DS3	12 Port Copper DS3 Interface Line Card	V
COPPER-6DS3	6 Port Copper DS3 Interface Line Card	V
CPU-GSR-PRP1		V
CPU-GSR-PRP2		V
CRS-16-ALARM	Cisco CRS-1 Series 16 Slots Alarm Board = CRS-16-ALARM	S
GSR10-AC-PDU	Cisco 12410 AC Power Distribution Unit (spare)	V
GSR10-ADVNCD-CSC	12010 Advanced Clock Scheduler Card	S
GSR10-ADVNCD-SFC	12010 Advanced Switch Fabric Card	S
GSR10-ALRM	12410, 12010 Alarm Card	S
GSR10-CSC	12410 Clock Scheduler Card	S
GSR10-SFC	Cisco 12410 Switch Fabric Card	S
GSR16/320-CSC	12416 Clock Scheduler Card	S
GSR16/320-SFC	12416 Switch Fabric Card	S
GSR16/80-CSC	Cisco 12016 80 Gbps GSR Scheduler/Fabric	S
GSR16/80-SFC	Cisco 12016 80 GbpsGSR Switch Fabric	S
GSR16-ALRM	Cisco 12016 GSR Alarm Card	V
GSR16-BLOWER	Cisco 12016, 12416 Blower	S
GSR-3GE	3 Port Gigabit Ethernet Line Card (trident)	V
GSR6-ADVNCD-CSC	12006 Advanced Clock Scheduler Card	S
GSR6-ALRM	12406, 12006 Alarm Card	S
GSR6-BLOWER	12406, 12006 Blower	S
GSR6-CSC	Cisco 12406 Clock Scheduler Card	S

Table 75 Supported Modules for Cisco 12000 Series Routers (continued)

Module Name	Module Description	Certification Level
GSR6-SFC	Cisco 12406 Switch Fabric Card	S
GSR8-CSC/ALRM	Cisco 12008 GSR Scheduler/Fabric/Alarm	S
GSR-8FE-FX	8 port Fast Ethernet card with Fiber Interface	V
GSR8-SFC	Switch Fabric	S
GSR-ALARM10	GSR Alarm module	V
GSR-ALARM16	GSR-Alarm	V
GSR-ALARM6	GSR Alarm module	V
GSR-BUS-BOARD16		V
GSR-CLOCK-OC192	GSR Clock Scheduler	V
GSR-CSC	GSR Clock Scheduler Card	V
GSR-CSC12410	GSR 12410 Clock scheduler	V
GSR-CSC16	Scheduler/Fabric Card	V
GSR-CSC16-OC192	GSR 12406 Clock Scheduler Card	V
GSR-CSC16-OC192	GSR 12016 OC192 Clock Scheduler Card	V
GSR-CSC6	GSR Clock Scheduler	V
GSR-E48-ATM-4OC12-MM-SR-SC	GSR Edge Engine 48, ATM, 4 port OC12/STM4Multi Mode Short Reach Line Card	V
GSR-E48-ATM-4OC12-SM-IR-SC	GSR Edge Engine 48, ATM, 4 ports OC12/STM4 Single Mode Intermediate Reach Line Card	V
GSR-E48-POS-16OC3-SM-IR-LC	16 Port OC3 SM Intermediate Reach POS	V
GSR-E48-POS-OC48-SM-LR-SC	GSR 12406 Switch Fabric Card	V
GSR-E48-POS-OC48-SM-SR-SC	GSR, Edge Engine 48 Port OC-48 SRP Single Mode Long Reach Line Card	V
GSR-E48-POS-QOC12-SM-IR-SC	4 Port OC12 SM Intermediate Reach POS	V
GSR-E-OC192-SM-SR-SC	Enhanced 1 Port OC 192 Short Reach 2 FC Connector Line Card	V
GSR-E-QOC48-SM-LR-SC	4 Port Enhanced OC 48 Short Reach SC Connector Line Card	V
GSR-E-QOC48-SM-SR-SC	4 Port Enhanced OC 48 Short Reach SC Connector Line Card	V
GSR-GEFE	GSR General Fan	V
GSR-PA-3GE	GSR 3 port Port Adapter	V
GSR-RP	GSR RoMman Recovery	V
GSR-SFC	GSR Switch Fabric Card	V

Table 75 Supported Modules for Cisco 12000 Series Routers (continued)

Module Name	Module Description	Certification Level
GSR-SFC12410	GSR 12410 Switch Fabric Card	V
GSR-SFC16	Switch Fabric Card	V
GSR-SFC16-OC192	GSR 12406 Switch Fabric Card	V
GSR-SFC6	GSR Switch Fabric Card	V
OC12/SRP-IR-SC-B	2 Port OC-12 Single Mode SRP Intermediate Reach Line Card	V
OC12/SRP-MM-SC-B	2 Port OC-12 Multi Mode SRP Line Card	V
OC-48E/POS-SR-SC-B	2 Port Packet Over Sonet OC-48, Single Mode, Short Reach, SC Connector Card	V
OC48X/POS-LR-SC	One-Port OC-48c/STM-16c POS/SDH ISE Line Card, Long Reach	V
OC48X/POS-SR-SC	One-Port OC-48c/STM-16c POS/SDH ISE Line Card, Short Reach	V
POS-EN-OC48-LR-SC	Enhanced OC-48 Long Reach SC Connector Line Card	V
POS-EN-OC48-SR-SC	Enhanced OC-48 Short Reach SC Connector Line Card	V
POS-EN-QOC12-IR	Enhanced 4 port OC-12 Intermediate Reach Line Card	V
POS-EN-QOC48-SM-LR-FC	4 Port (Quad) Enhanced OC-48 Long Reach FC Connector Line Card	V
POS-EN-QOC48-SM-LR-SC	4 Port (Quad) Enhanced OC-48 Long Reach SC Connector Line Card	V
POS-EN-QOC48-SM-SR-SC	4 Port (Quad) Enhanced OC-48 Short Reach SC Connector Line Card	V
POS-OC48-SM-SR-SC	1 Port Packet Over Sonet OC-48, Single Mode, Short Reach, SC Connector Card	V
POS-QOC12-MM-SR	4 port (Quad) OC-12 POS Card, Single Mode, Short Reach	V
PRP-1	Performance Route Processor-1	V
PRP-2	Cisco XR 12000 and 12000 Series Performance Router Processor-2	V
PRP-3	Performance Route Processor-2	V
PRP-4	Cisco XR 12000 and 12000 Series Performance Router Processor-3	V
SFP-OC48-IR1	OC-48c/STM-16c	S
SFP-OC48-LR2	OC-48c/STM-16c SFP, Long Reach (80km)	S
SPA-10X1GE	10-port 1 GbE Shared Port Adapter	S
SPA-10X1GE-V2	10-port 1GbE SPA (Fugu ASIC)	N

Table 75 Supported Modules for Cisco 12000 Series Routers (continued)

Module Name	Module Description	Certification Level
SPA-1X10GE-L-V2	Cisco 1-Port 10GE LAN-PHY Shared Port Adapter	S
SPA-1xOC192POS-VSR	1-port OC192/STM64 POS VSR Optics Shared Port Adapter	S
SPA-1XOC48POS/RPR	Port OC-48c/STM-16c POS/RPR Shared Port Adapter	S
SPA-1XTENGE-XFP	1-port 10Gigabit Ethernet Shared Port Adapter XFP based	S
SPA-1XTENGE-XFP-V2	1-port 10GbE Shared Port Adapter XFP based V2	S
SPA-24CHT1-CE-ATM	24-Port Channelized T1/E1/J1 ATM CEoP SPA	S
SPA-2X1GE	2 ports Gigabit Ethernet Shared Port Adapters	S
SPA-2X1GE-V2	2 ports Gigabit Ethernet Shared Port Adapters	S
SPA-2XCT3/DS0	2-port Channelized T3 to DS0 Shared Port Adapter	S
SPA-2XOC12-POS	2-Port OC-3c/STM-1 and OC-12c/STM-4 POS SPA	S
SPA-2XOC48POS/RPR	2-port OC48/STM16 POS/RPR Shared Port Adapters	S
SPA-2XT3/E3	2-port Clear Channel T3/E3 Shared Port Adapter	S
SPA-4XCT3/DS0	4-port Channelized T3 to DS0 Shared Port Adapter	V
SPA-4XOC12-POS	4-port OC-12/STM-4 POS Shared Port Adapters	S
SPA-4XT3/E3	4-port Clear Channel T3/E3 Shared Port Adapter	S
SPA-5X1GE	5-Port Gigabit Ethernet SPA	S
SPA-5X1GE-V2	5-Port Gigabit Ethernet SPA	S
SPA-8X1FE-TX-V2	8-port 10/100 Ethernet SPA TX (Fugu ASIC)	S
SPA-8X1GE	8-port Gigabit Ethernet Shared Port Adapter_V2	S
SPA-8X1GE-V2	8-port 1GbE SPA (Fugu ASIC)	N
SPA-8XCHT1/E1	8-port Channelized T1/E1 to DS0 Shared Port Adapter	S
SPA-8XFE-TX	8-port 10/100 Ethernet SPA with RJ-45	S
SPA-8XOC12-POS	8-Port OC-12c/STM-4 Multirate POS SPA	S
SPA-OC192POS-LR	1-port OC192/STM64 POS/RPR SMLR Optics	S
SPA-OC192POS-VSR	1-port OC192/STM64 POS/RPR VSR Optics	S
SPA-OC192POS-XFP	1-port OC192/STM64 POS/RPR XFP Optics Shared Port Adapter with XFP-10GLR-OC192SR	S

Table 75 Supported Modules for Cisco 12000 Series Routers (continued)

Module Name	Module Description	Certification Level
SPA-OC192RPR-XFP	1-port OC192/STM64 POS/RPR XFP Optics Shared Port Adapter = SPA-OC192RPR-XFP	S
SRP-OC12-MM	1 Port OC-12 Multi Mode SRP Line Card	V
SRP-OC12-SM-IR	1 Port OC-12 Single Mode SRP Intermediate Reach Line Card	V
SSRP-OC48-SM-LR	1 Port OC-48 SRP Single Mode Long Reach Line Card	V
SSRP-OC48-SM-SR	1 Port OC-48 SRP Single Mode Short Reach Line Card	V

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco 12000 Series—Supported Technologies, page 104.

Cisco 12000 Series—Supported Technologies

The following technologies are supported by the Cisco 12000 Series in Cisco ANA 3.6 SP1:

Cisco 12000 Series—Supported Service Events

Table 76 lists the supported service events (also called service alarms) for Cisco 12000 Series routers in Cisco ANA 3.6 SP1.

Table 76 Service Events for Cisco 12000 Series Routers

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	N
Secondary HSRP interface is active Secondary HSRP interface is not active	N
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
Cloud Problem	N
Broken LSP discovered	N
MPLS Black hole	N
Layer 2 Tunnel Down	N
MPLS TE Tunnel Down/Flapping	N
BGP Neighbor Down	N
Card up/down	Y

Cisco XR 12000 Series Routers

This section includes the following information about Cisco XR 12000 Series routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco XR 12000 Series—Supported Software Versions

Table 77 lists the supported software versions for Cisco XR 12000 Series routers in Cisco ANA 3.6 SP1.

Table 77 Supported Software Versions for Cisco XR 12000 Series Routers

Software Version	Certification Level
IOS XR 3.4.0	V
IOS XR 3.4.1	V
IOS XR 3.4.*	S
IOS XR 3.5.*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco XR 12000 Series—Supported Topologies

The following topologies are supported for Cisco XR 12000 Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP
- MPLS

Cisco XR 12000 Series—Supported Modules

Table 78 lists the supported modules for Cisco XR 12000 Series routers in Cisco ANA 3.6 SP1.

Table 78 Supported Modules for Cisco XR 12000 Series Routers

Module Name	Module Description	Certification Level
12000-SIP-401	Cisco 12000 Series SPA Interface Processor-401	S
12000-SIP-501	Cisco 12000 Series SPA Interface Processor-501	S
12000-SIP-600	Cisco 12000 Series SPA Interface Processor-600	S
12000-SIP-601	Cisco 12000 Series SPA Interface Processor-601	S
12DS3-SMB	24 Port Copper DS3 Interface Line Card	V
16OC3X/POS-IR-LC-B	GSR 16-Port OC3/POS MM/I Eng3 Release B =	S
16OC3X/POS-I-LC-B	GSR16-Port OC3/POS MM/I Eng3 Release B	S
16OC3X/POS-M-MJ-B	GSR16-Port OC3/POS MM/I Eng3 Release B	S
16-OC3X/POS-IR-LC	16-Port Packet-Over-SONET OC-3/STM-1 with Extended Feature Set Line Card (concatenated)	V
1X10GE-ER-SC	1 Port 10Giga Ethernet Line Card	S
1X10GE-LR-SC	1 Port 10Giga Ethernet Line Card	S
3GE-GBIC-SC	4 Port Gigabit Ethernet Line Card (trident)	V
4GE-SFP-LC	Cisco 12000 4 Port Gigabit Ethernet Card	S
4OC12/POS-IR-SC-B	Enhanced 4 port OC-12 Intermediate Reach Line Card	V
4OC12X/POS-I-SC-B	4 Port OC12 SM Intermediate Reach POS	V
4OC12X/POS-I-SC-B	4 Port OC12 SM Intermediate Reach POS	V
4OC12X/POS-M-SC-B	5 port (Quad) OC-12 POS Card, Single Mode, Short Reach	V
4OC3/ATM-IR-SC	4 port OC3/STM1 ATM line MM/IR card	S
4OC3/ATM-MM-SC	4 port OC3/STM1 ATM line MM/IR card	S
4OC3X/POS-IR-LC-B	GSR 4-Port OC3/POS IR/LR/MM Eng3 Release B	S
4OC3X/POS-LR-LC-B	GSR 4-Port OC3/POS IR/LR/MM Eng3 Release B	S
4OC3X/POS-MM-MJ-B	GSR 4-Port OC3/POS IR/LR/MM Eng3 Release B	S
4OC48E/POS-LR-SC	5 Port (Quad) Enhanced OC-48 Long Reach FC Connector Line Card	V
4OC48E/POS-SR-SC	5 Port (Quad) Enhanced OC-48 Short Reach SC Connector Line Card	V
4XOC48POS/RPR	4-port OC48/STM16 POS/RPR Shared Port Adapter = SPA-4XOC48POS/RPR	S
6CT3-SMB	18 Port Copper DS3 Interface Line Card	V

Table 78 Supported Modules for Cisco XR 12000 Series Routers (continued)

Module Name	Module Description	Certification Level
8FE-FX-SC	8-Port Fast Ethernet Line Card	V
8FE-TX-RJ45	8-Port Fast Ethernet Line Card	V
8FE-TX-RJ45-B	8-port 100baseTX, RJ45 connector type, version B	S
8OC3X/POS-IR-LC-B	GSR 8-Port OC3/POS MM/IR Eng3 Release B	S
8OC3X/POS-MM-MJ-B	GSR 8-Port OC3/POS MM/IR Eng3 Release B	S
8X1FE-V2	8-port Fast Ethernet Shared Port Adapter V2 = SPA-8X1FE-V2	S
BUS_BOARD	GSR16 BUS BOARD (16) =	S
CHOC12/DS1-IR-SC	Cisco 12000 Series 1-Port Channelized OC-12c/STM-4	V
COPPER-12DS3	12 Port Copper DS3 Interface Line Card	V
COPPER-6DS3	6 Port Copper DS3 Interface Line Card	V
CPU-GSR-PRP1		V
CPU-GSR-PRP2		V
CRS-16-ALARM	Cisco CRS-1 Series 16 Slots Alarm Board = CRS-16-ALARM	S
GSR10-AC-PDU	Cisco 12410 AC Power Distribution Unit (spare)	V
GSR10-ADVNCD-CSC	12010 Advanced Clock Scheduler Card	S
GSR10-ADVNCD-SFC	12010 Advanced Switch Fabric Card	S
GSR10-ALRM	12410, 12010 Alarm Card	S
GSR10-CSC	12410 Clock Scheduler Card	S
GSR10-SFC	Cisco 12410 Switch Fabric Card	S
GSR16/320-CSC	Cisco 12416 Clock Scheduler Card= GSR16/320-CSC	S
GSR16/320-SFC	Cisco 12416 Switch Fabric Card = GSR16/320-SFC	S
GSR16/80-CSC	OC48 Clock Scheduler Card for 12016 chassis	V
GSR16/80-SFC	OC48 Switch Fabric Card for 12016 chassis	V
GSR16-ALRM	Cisco 12016 GSR Alarm Card	V
GSR16-BLOWER	Cisco 12016, 12416 Blower	S
GSR-3GE	3 Port Gigabit Ethernet Line Card (trident)	V
GSR6-ADVNCD-CSC	12006 Advanced Clock Scheduler Card	S
GSR6-ALRM	12406, 12006 Alarm Card	S
GSR6-BLOWER	12406, 12006 Blower	S
GSR6-CSC	Cisco 12406 Clock Scheduler Card	S
GSR6-SFC	Cisco 12406 Switch Fabric Card	S

Table 78 Supported Modules for Cisco XR 12000 Series Routers (continued)

Module Name	Module Description	Certification Level
GSR8-CSC/ALRM	Cisco 12008 GSR Scheduler/Fabric/Alarm	S
GSR-8FE-FX	8 port Fast Ethernet card with Fiber Interface	V
GSR8-SFC	Switch Fabric	S
GSR-ALARM10	GSR Alarm module	V
GSR-ALARM16	GSR-Alarm	V
GSR-BUS-BOARD16		V
GSR-CLOCK-OC192	GSR Clock Scheduler	V
GSR-CSC	GSR Clock Scheduler Card	V
GSR-CSC12410	GSR 12410 Clock scheduler	V
GSR-CSC16	GSR Clock Scheduler	V
GSR-CSC16-OC192		V
GSR-E48-ATM-4OC12-MM-SR-SC	GSR Edge Engine 48, ATM, 4 port OC12/STM4Multi Mode Short Reach Line Card	V
GSR-E48-ATM-4OC12-SM-IR-SC	GSR Edge Engine 48, ATM, 4 ports OC12/STM4 Single Mode Intermediate Reach Line Card	V
GSR-E48-POS-16OC3-SM-IR-LC	16 Port OC3 SM Intermediate Reach POS	V
GSR-E48-POS-OC48-SM-LR-SC	GSR 12406 Switch Fabric Card	V
GSR-E48-POS-OC48-SM-SR-SC	GSR, Edge Engine 48 Port OC-48 SRP Single Mode Long Reach Line Card	V
GSR-E48-POS-QOC12-SM-IR-SC	4 Port OC12 SM Intermediate Reach POS	V
GSR-E-OC192-SM-SR-SC	"Enhanced 1 Port OC 192 Short Reach 2 FC Connector Line Card	V
GSR-E-QOC48-SM-LR-SC	4 Port Enhanced OC 48 Short Reach SC Connector Line Card	V
GSR-E-QOC48-SM-SR-SC	4 Port Enhanced OC 48 Short Reach SC Connector Line Card	V
GSR-GEFE	GSR General Fan	V
GSR-PA-3GE	GSR 3 port Port Adapter	V
GSR-RP	GSR RoMman Recovery	V
GSR-SFC	GSR Switch Fabric Card	V
GSR-SFC12410	GSR 12410 Switch Fabric Card	V
GSR-SFC16	Switch Fabric Card	V
GSR-SFC16-OC192	GSR OC192 Switch Fabric Card	V

Table 78 Supported Modules for Cisco XR 12000 Series Routers (continued)

Module Name	Module Description	Certification Level
OC12/SRP-IR-SC-B	2 Port OC-12 Single Mode SRP Intermediate Reach Line Card	V
OC12/SRP-MM-SC-B	2 Port OC-12 Multi Mode SRP Line Card	V
OC-48E/POS-SR-SC-B	2 Port Packet Over Sonet OC-48, Single Mode, Short Reach, SC Connector Card	V
OC48X/POS-LR-SC	One-Port OC-48c/STM-16c POS/SDH ISE Line Card, Long Reach	V
OC48X/POS-SR-SC	One-Port OC-48c/STM-16c POS/SDH ISE Line Card, Short Reach	V
POS-EN-OC48-LR-SC	Enhanced OC-48 Long Reach SC Connector Line Card	V
POS-EN-OC48-SR-SC	Enhanced OC-48 Short Reach SC Connector Line Card	V
POS-EN-QOC12-IR	Enhanced 4 port OC-12 Intermediate Reach Line Card	V
POS-EN-QOC48-SM-LR-FC	4 Port (Quad) Enhanced OC-48 Long Reach FC Connector Line Card	V
POS-EN-QOC48-SM-LR-SC	4 Port (Quad) Enhanced OC-48 Long Reach SC Connector Line Card	V
POS-EN-QOC48-SM-SR-SC	4 Port (Quad) Enhanced OC-48 Short Reach SC Connector Line Card	V
POS-OC48-SM-SR-SC	1 Port Packet Over Sonet OC-48, Single Mode, Short Reach, SC Connector Card	V
POS-QOC12-MM-SR	4 port (Quad) OC-12 POS Card, Single Mode, Short Reach	V
PRP-1	Performance Route Processor-1	V
PRP-2	Cisco XR 12000 and 12000 Series Performance Router Processor-2	V
PRP-3	Performance Route Processor-2	V
PRP-4	Cisco XR 12000 and 12000 Series Performance Router Processor-3	V
SFP-OC48-IR1	OC-48c/STM-16c	S
SFP-OC48-LR2	OC-48c/STM-16c SFP, Long Reach (80km)	S
SPA-10X1GE	10-port 1 GbE Shared Port Adapter	S
SPA-1X10GE-L-V2	Cisco 1-Port 10GE LAN-PHY Shared Port Adapter	S
SPA-1XOC192POS-VSR	1-port OC192/STM64 POS VSR Optics Shared Port Adapter	S
SPA-1XOC48POS/RPR	Port OC-48c/STM-16c POS/RPR Shared Port Adapter	S

Table 78 Supported Modules for Cisco XR 12000 Series Routers (continued)

Module Name	Module Description	Certification Level
SPA-1XTENGE-XFP	1-port 10Gigabit Ethernet Shared Port Adapter XFP based	S
SPA-1XTENGE-XFP-V2	1-port 10GbE Shared Port Adapter XFP based V2	S
SPA-2X1GE	2 ports Gigabit Ethernet Shared Port Adapters	S
SPA-2X1GE-V2	2 ports Gigabit Ethernet Shared Port Adapters	S
SPA-2XCT3/DS0	2-port Channelized T3 to DS0 Shared Port Adapter	S
SPA-2XOC12-POS	2-Port OC-3c/STM-1 and OC-12c/STM-4 POS SPA	S
SPA-2XOC48POS/RPR	2-port OC48/STM16 POS/RPR Shared Port Adapters	S
SPA-2XT3/E3	2-port Clear Channel T3/E3 Shared Port Adapter	S
SPA-4XCT3/DS0	4-port Channelized T3 to DS0 Shared Port Adapter	V
SPA-4XOC12-POS	4-port OC-12/STM-4 POS Shared Port Adapters	S
SPA-4XT3/E3	4-port Clear Channel T3/E3 Shared Port Adapter	S
SPA-5X1GE	5-Port Gigabit Ethernet SPA	S
SPA-5X1GE-V2	5-Port Gigabit Ethernet SPA	S
SPA-8X1FE-TX-V2	8-port 10/100 Ethernet SPA TX (Fugu ASIC)	S
SPA-8X1GE	8-port Gigabit Ethernet Shared Port Adapter_V2	S
SPA-8XCHT1/E1	8-port Channelized T1/E1 to DS0 Shared Port Adapter	S
SPA-8XFE-TX	8-port 10/100 Ethernet SPA with RJ-45	S
SPA-8XOC12-POS	8-Port OC-12c/STM-4 Multirate POS SPA	S
SPA-IPSEC-2G-2	Cisco XR 12000 Series IPsec VPN Shared Port Adapter	S
SPA-OC192POS-LR	1-port OC192/STM64 POS/RPR SMLR Optics	S
SPA-OC192POS-VSR	1-port OC192/STM64 POS VSR Optics Shared Port Adapter = SPA-OC192POS-VSR	S
SPA-OC192POS-XFP	1-port OC192/STM64 POS/RPR XFP Optics Shared Port Adapter with XFP-10GLR-OC192SR	S
SPA-OC192RPR-XFP	1-port OC192/STM64 POS/RPR XFP Optics Shared Port Adapter = SPA-OC192RPR-XFP	S
SRP-OC12-MM	1 Port OC-12 Multi Mode SRP Line Card	V
SRP-OC12-SM-IR	1 Port OC-12 Single Mode SRP Intermediate Reach Line Card	V

Table 78 Supported Modules for Cisco XR 12000 Series Routers (continued)

Module Name	Module Description	Certification Level
SSRP-OC48-SM-LR	1 Port OC-48 SRP Single Mode Long Reach Line Card	V
SSRP-OC48-SM-SR	1 Port OC-48 SRP Single Mode Short Reach Line Card	V
SPA-24CHT1-CE-ATM	24-Port Channelized T1/E1/J1 ATM CEoP SPA	S
16OC3X/POS-M-MJ-B	GSR16-Port OC3/POS MM/I Eng3 Release B	V

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco XR 12000 Series—Supported Technologies, page 112.

Cisco XR 12000 Series—Supported Technologies

The following technologies are supported by the Cisco XR 12000 Series in Cisco ANA 3.6 SP1:

Cisco XR 12000 Series—Supported Service Events

Table 79 lists the supported service events (also called service alarms) for Cisco XR 12000 Series routers in Cisco ANA 3.6 SP1.

Table 79 Service Events for Cisco XR 12000 Series Routers

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	N
Secondary HSRP interface is active Secondary HSRP interface is not active	N
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
Cloud Problem	N
Broken LSP discovered	N
MPLS Black hole	N
Layer 2 Tunnel Down	N
MPLS TE Tunnel Down/Flapping	N
BGP Neighbor Down	N
Card up/down	Y

Cisco XR 12000 Series—Additional Information

This section contains additional information about the Cisco XR 12000 Series and includes the following topic:

Cisco XR 12000 Series Prerequisite

As a prerequisite for the Cisco XR 12000 Series VNE, install the Cisco IOS XR Manageability Package on top of the IOS-XR version. In addition, the device configuration must contain the command, **xml agent tty**.

When creating the SNMP community, the SystemOwner should be specified.

Cisco Carrier Routing System (CRS-1) Routers

This section includes the following information about Cisco Carrier Routing System (CRS-1) routers:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Routers in Cisco ANA 3.6 SP1.

Cisco Carrier Routing System (CRS-1)—Supported Software Versions

Table 80 lists the supported software versions for Cisco Carrier Routing System (CRS-1) routers in Cisco ANA 3.6 SP1.

Table 80 Supported Software Versions for Cisco Carrier Routing System (CRS-1) Routers

Software Version	Certification Level
IOS XR 3.4.0	V
IOS XR 3.4.1	V
IOS XR 3.4*	S
IOS XR 3.5*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco Carrier Routing System (CRS-1)—Supported Topologies

The following topologies are supported for Cisco Carrier Routing System (CRS-1) routers in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP
- MPLS

Cisco Carrier Routing System (CRS-1)—Supported Modules

Table 81 lists the supported modules for Cisco Carrier Routing System (CRS-1) routers in Cisco ANA 3.6 SP1.

Table 81 Supported Modules for Cisco Carrier Routing System (CRS-1) Routers

Module Name	Module Description	Certification Level
16OC48-POS/DPT	Cisco CRS-1 Series 16xOC48/STM16 POS/DPT Interface Module	V
1OC768-ITU/C	1 port OC768-POS-DWDM Plim	V
1OC768-POS-SR	1-port OC-768c/STM-256c PLIM, with short-reach optics (POS)	S
4-10GE-ITU/C	Module Crs1 4x10 Ge CDwdm Plim	V
4OC192-ITU/C	Module Crs 1 4 ports OC192 C Dwdm Plim	S
4OC192-POS/DPT	Cisco CRS-1 Series 4xOC192/STM64 POS/DPT Interface Module	S
4OC192-POS/DPT-IR	Cisco CRS-1 Series 4xOC192/STM64 POS/DPT Interface Module/IR	V
4OC192-POS/DPT-LR	4OC192-POS DPT	V
4OC192-POS/DPT-SR	Cisco CRS-1 Series 4xOC192/STM64 POS/DPT Interface Module/SR	V
4OC192-POS/DPT-VS	4OC192-POS DPT	V
8-10GbE	8x10 Gigabite Ethernet port	V
8XOC3-OC12-PO	SPA POS 8XOC12 Card	S
CRS-16-AC-RECT	Cisco CRS-1 Series AC Pwr Rectifier for 16 slot LCC and FCC	S
CRS-16-ALARM	Cisco CRS-1 Series 16 Slots Alarm	V

Table 81 Supported Modules for Cisco Carrier Routing System (CRS-1) Routers (continued)

Module Name	Module Description	Certification Level
CRS-16-DC-PEM	DC power entry module for line card chassis	S
CRS-16-FC/D		S
CRS-16-FC/M	Cisco CRS-1 Series 16 Slots Fabric Card / Multi	V
CRS-16-FC/S	Cisco CRS-1 Series 16 Slots Fabric Card Single	V
CRS-16-LCC	16 slots Line Card Chassis	V
CRS-16-LCC-FAN-CT	Cisco CRS-1 Series LC Chassis Fan Controler	V
CRS-16-LCC-FAN-TR	Cisco CRS-1 16 Slots FCC fan tray with fans	S
CRS-16-LCC-PS-ACD	AC Delta power shelf for line card chassis	S
CRS-16-LCC-PS-ACW	AC Wye power shelf for line card chassis	S
CRS-16-LCC-PS-DC	DC power shelf for line card chassis	S
CRS-16-RP	Module Crs1 16 slots RP	V
CRS-16-RP-B	Module Crs1 16 slots RP - B	V
CRS1-SIP-800	Module Crs1 SPA Interface Card	V
CRS-4-AC-SHELF	AC Power shelf	S
CRS-4-AC-SUPPLY	AC power supplies	S
CRS-4-CH	4 slots Chassis	V
CRS-4-DC-INPUT	DC power input shelf	S
CRS-4-DC-SUPPLY	DC power supplies	S
CRS-4-FAN-TR	Cisco CRS-1 4 Slots FCC fan tray with fans	S
CRS-4-FC	CRS-1 4-Slot Fabric Card	S
CRS-4-LCC	Cisco CRS-1 Series 4 Slots Line Card Chassis	S
CRS-8-AC-RECT	Cisco CRS-1 AC rectifier module	S
CRS-8-DC-PEM	DC power entry module for line card chassis	S
CRS-8-FC/D		S
CRS-8-FC/M		S
CRS-8-FC/S	Cisco CRS-1 Series 8 Slots Fabric Card Single	V
CRS-8-LCC	8 slots Line Card Chassis	V
CRS-8-LCC-ACD	Power Supply Crs 1 8 Slots AC Delta	S
CRS-8-LCC-ACW	Power Supply Crs 1 8 Slots ACW	S
CRS-8-LCC-DC	Cisco CRS-1 Series 8 slots with redundant DC power	S
CRS-8-LCC-FAN-TR	Cisco CRS-1 8 Slots FCC fan tray with fans	S
CRS-8-LCC-PDU-ACD	Cisco CRS-1 Series AC Delta PDU for CRS-8 LCC	S
CRS-8-LCC-PDU-ACW	AC Wye PDU	S
CRS-8-LCC-PDU-DC	DC PDU	S

Table 81 Supported Modules for Cisco Carrier Routing System (CRS-1) Routers (continued)

Module Name	Module Description	Certification Level
CRS-8-RP	Module Crs1 8 slots RP	V
CRS-DRP	Cisco CRS-1 Series Distributed Route Processor	S
CRS-DRP-ACC	Cisco CRS-1 Series Distributed Route Processor Front Accsry	S
CRS-DRP-B-CPU	Cisco CRS-1 Series Distributed Route Processor	V
CRS-DRP-B-PLIM	Cisco CRS-1 Series Distributed Route Processor Front Accsry	V
CRS-DRP-CPU	Cisco CRS-1 Series Distributed Route Processor	V
CRS-DRP-PLIM	Cisco CRS-1 Series Distributed Route Processor Front Accsry	V
CRS-FCC	Cisco CRS-1 Series Fabric Card Chassis Only	V
CRS-FCC-FAN-TR	Cisco CRS-1 FCC fan tray with fans	S
CRS-FCC-FM-2S	Optical dual interface module (OIM)	S
CRS-FCC-LED	Fiber module LED card	S
CRS-FCC-OIM-1S	Optical single interface module (OIM)	S
CRS-FCC-PS-ACD	CRS-1 Fabric Chassis AC Delta Power Supply	S
CRS-FCC-PS-ACW	CRS-1 Fabric Chassis AC Wye Option	S
CRS-FCC-PS-DC	DC power shelf	S
CRS-FCC-SC	Module Crs 1 16 mS 2 Fan Ctrllrer Fabric	S
CRS-FCC-SC/GEW	Module Crs 1 Fcc SC Ge	S
CRS-FCC-SC-22GE	CRS-1 fan controllers	S
CRS-FCC-SC-GE	2-port Shelf controller Gigabit Ethernet	S
CRS-FCC-SFC	Switch fabric card (fabric card chassis) S2 switch fabric cards	S
CRS-MSC	Cisco CRS-1 Series Modular Service Card	V
CRS-MSC-B	Cisco CRS-1 Series Modular Service Card	V
CRS-XENPACK-10-GB-LR	Cisco CRS-1 Series 8x10GbE Interface Module	S
SPA-10X1GE	10-Port Gigabit Ethernet SPA	S
SPA-10X1GE-V2	10-Port Gigabit Ethernet SPA	S
SPA-1X10GE-L-V2	Cisco 1-Port 10GE LAN-PHY Shared Port Adapter	S
SPA-1xOC192POS-VSR	1-port OC192/STM64 POS VSR Optics Shared Port Adapter	S
SPA-1xOC192POS-XFP	1-port OC192/STM64 POS XFP Optics Shared Port Adapter	S
SPA-1XOC48POS/RPR	Port OC-48c/STM-16c POS/RPR Shared Port Adapter	S

Table 81 Supported Modules for Cisco Carrier Routing System (CRS-1) Routers (continued)

Module Name	Module Description	Certification Level
SPA-1XTENGE-XFP	1-port 10 Gigabit Ethernet Shared Port Adapter XFP based	S
SPA-1XTENGE-XFP-V2	1-port 10GbE Shared Port Adapter XFP based V2 = SPA-1XTENGE-XFP-V2	S
SPA-2X1GE	2 ports Gigabit Ethernet Shared Port Adapters	S
SPA-2X1GE-V2	2 ports Gigabit Ethernet Shared Port Adapters	S
SPA-2XCT3/DS0	2-Port Channelized T3 SPA	S
SPA-2XOC12-POS	2-Port OC-3c/STM-1 and OC-12c/STM-4 POS SPA	S
SPA-2XOC48POS/RPR	3 Ports OC-48c/STM-16c POS/RPR Shared Port Adapter	S
SPA-2XT3/E3	2-Port T3/E3 Serial SPA	S
SPA-4XOC12-POS	4-Port OC-3c/STM-1 and OC-12c/STM-4 POS SPA	S
SPA-4XOC3-POS	4-Port OC-3c/STM-1 POS SPA	V
SPA-4XOC3-POS-V2	4-Port OC-3c/STM-1 POS SPA	V
SPA-4XOC48POS/RPR	Port OC-48c/STM-16c POS/RPR Shared Port Adapter	S
SPA-4XT3/E3	4-Port T3/E3 Serial SPA	S
SPA-5X1GE	5-Port Gigabit Ethernet SPA	S
SPA-5X1GE-V2	5-Port Gigabit Ethernet SPA	S
SPA-8X1GE	8-port Gigabit Ethernet Shared Port Adapter	V
SPA-8X1GE-V2	8-port Gigabit Ethernet Shared Port Adapter	V
SPA-8XCHT1/E1	8-Port Channelized T1/E1 SPA	S
SPA-8XOC12-POS	8-Port OC-12c/STM-4 Multirate POS SPA	S
SPA-8XOC3-POS	8-Port OC-3c/STM-1 POS SPA	V
SPA-OC192POS-LR	1-PORT OC-192C/STM-64C POS/RPR SHARED PORT ADAPTER	S
SPA-OC192POS-VSR	1-PORT OC-192C/STM-64C POS/RPR SHARED PORT ADAPTER	S
SPA-OC192POS-XFP	1-port OC192/STM64 POS/RPR XFP Optics	V
XFP-10GLR-OC192SR	1-port OC192/STM64 POS/RPR XFP Optics Shared Port Adapter	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco Carrier Routing System (CRS-1)—Supported Technologies, page 119.

Cisco Carrier Routing System (CRS-1)—Supported Technologies

The following technologies are supported by the Cisco Carrier Routing System (CRS-1) in Cisco ANA 3.6 SP1:

Cisco Carrier Routing System (CRS-1)—Supported Service Events

Table 82 lists the supported service events (also called service alarms) for Cisco Carrier Routing System (CRS-1) routers in Cisco ANA 3.6 SP1.

Table 82 Service Events for Cisco Carrier Routing System (CRS-1) Routers

Event Name	Expedited
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N

Table 82 Service Events for Cisco Carrier Routing System (CRS-1) Routers (continued)

Event Name	Expedited
Cloud Problem	N
Broken LSP discovered	N
MPLS Black hole	N
Layer 2 Tunnel Down	N
BGP Neighbor Down	N
Card up/down	Y

Cisco Carrier Routing System (CRS-1)—Additional Information

This section contains additional information about the Cisco Carrier Routing System (CRS-1) and includes the following topics:

Cisco Carrier Routing System (CRS-1) Prerequisite

As a prerequisite for the CRS-1 VNE, install the Cisco IOS XR Manageability Package on top of the IOS-XR version. In addition, the device configuration must contain the command, **xml agent tty**.

When creating the SNMP community, the SystemOwner should be specified.

SDR Support for CRS-1

Secure Domain Router (SDR) is supported as a separate independent VNE, with its own IP and login sequence. When adding a SDR to Cisco ANA it is treated like any other network element, namely, it is added as a new VNE using Cisco ANA Manage. The SDR IP address is attached to the active DRP of the SDR (or the virtual IP, if it exists).

As a prerequisite for the CRS-1 VNE, install the Cisco IOS XR Manageability Package on top of the IOS-XR version (XR 3.4 and 3.4.1). In addition, the device configuration must contain the command, xml agent tty and when creating the SNMP community the SystemOwner should be specified.

The IP address, snmp read community and telnet login sequence must be defined.

Cisco ANA uses the management network (if available) to manage the devices. The CRS platform assigns specific management interfaces on the RP modules (DRP in the case of SDR). In order to retrieve the IP address of these management interfaces, login to the device and run the command `show ipv4 interface brief | include Mgmt` as shown in the example:

```
RP/0/RP1/CPU0:P1_CRS8#show ipv4 interface brief | include Mgmt
MgmtEth0/RP1/CPU0/0            1.60.34.104     Up                  Up
MgmtEth0/4/CPU0/0              unassigned      Shutdown            Down
MgmtEth0/4/CPU1/0              unassigned      Shutdown            Down
```

In a multiple (D)RP environments there is an option to configure a virtual management interface and assign an IP address to it, so that the device is reachable via the same IP address no matter which (D)RP is active. In such an environment, each (D)RP has its own IP address but it is not used in order to access the device.

In order to get the virtual IP address, login to the device and run the command `show running-config ipv4 virtual address` as shown in the example:

```
DRP/0/3/CPU0:CRS-PE1#show running-config ipv4 virtual address
ipv4 virtual address 10.52.123.11 255.255.255.0
```

If the SDR is managed in-band the management IP address should be supplied by the customer.

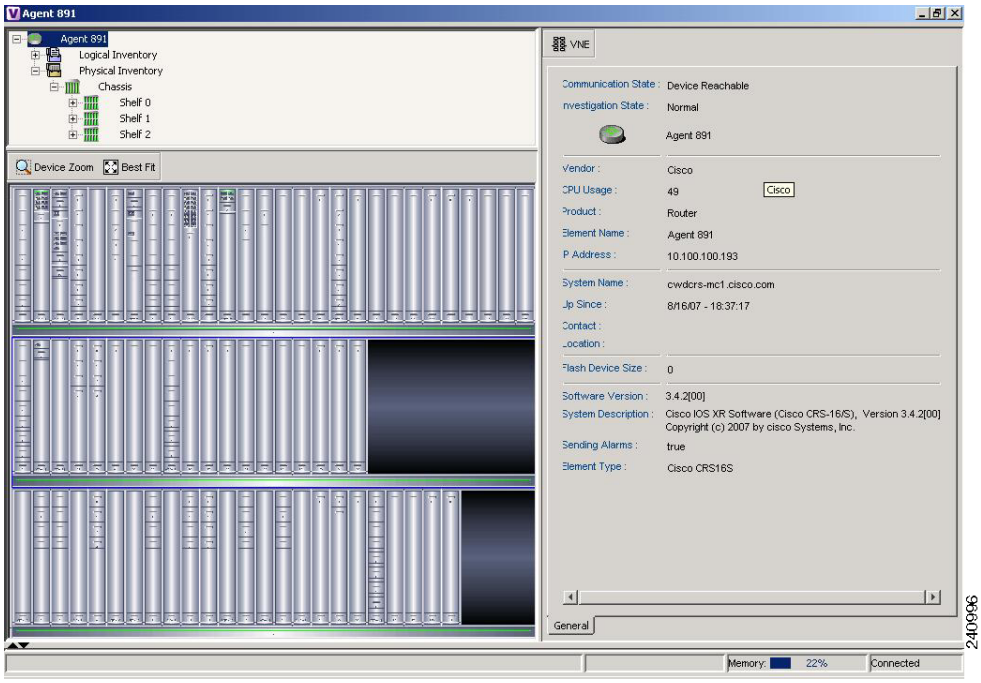
The owner SDR (namely, the main router) presents all the modules that are installed on the chassis, excluding the ports that belong to other SDRs.

The VNE of the SDR only displays the modules that are associated with the SDR in the Inventory window of Cisco ANA NetworkVision, it does not display the fabric, fan and power supply (namely, the shared modules).

Multichassis Support for CRS-1

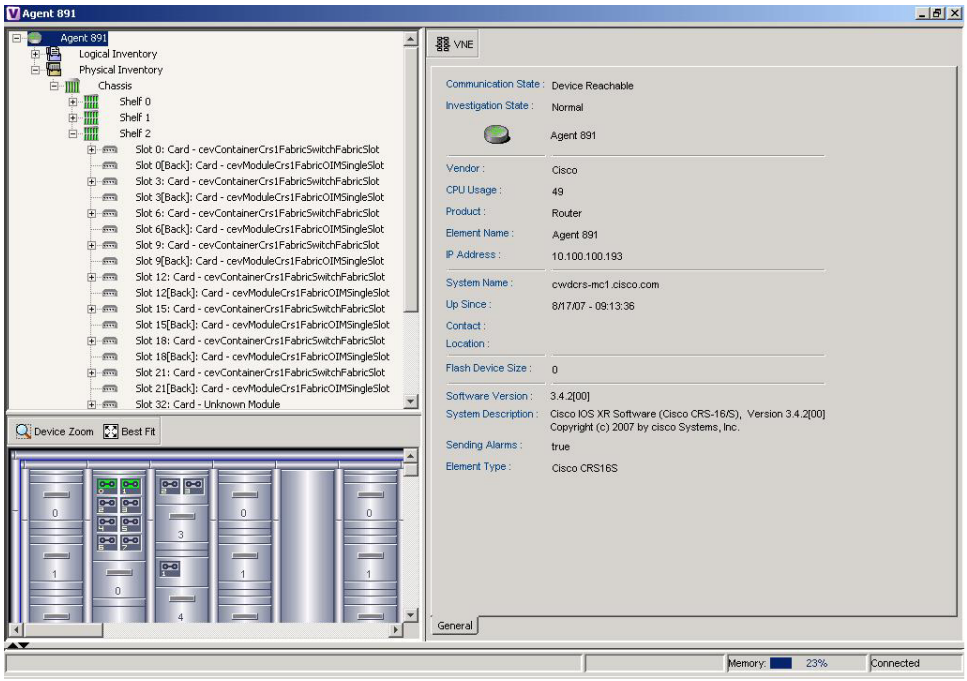
Multichassis support is available in Cisco ANA for 16-slot CRS-1 devices. As shown in Figure 1, the chassis functions purely as a container for the shelves, which are treated as individual chassis and are numbered incrementally starting with 0.

Figure 1 CRS-1 Multichassis Support



As shown in Figure 2, expanding a shelf displays the modules that are installed on that shelf.

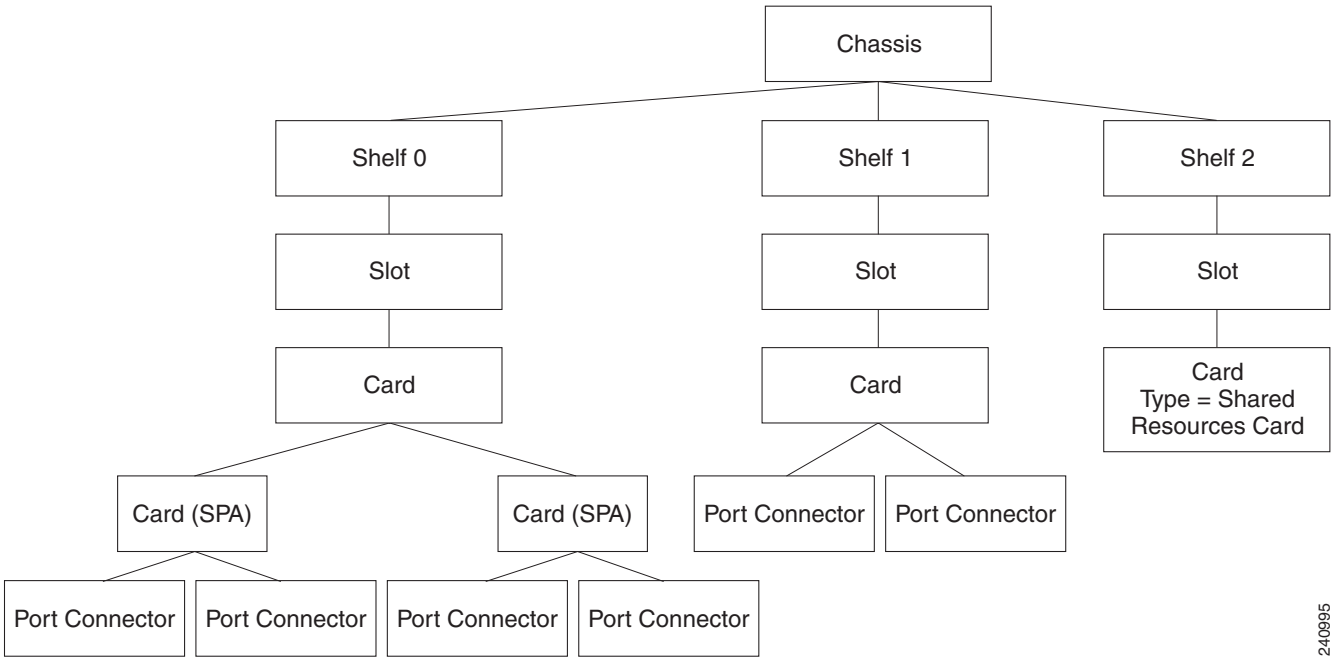
Figure 2 CRS-1 Multichassis Support—Expanded View



Because each shelf is treated as a chassis, chassis parameters such as description, serial number, status, and type are displayed for each shelf, not for the actual chassis in which the shelves are installed.

Figure 3 describes the physical model for the CRS-1 multichassis.

Figure 3 CRS-1 Multichassis Physical Model



When adding a multichassis device to Cisco ANA, it is treated like any other network element, namely, it is added as a new VNE using Cisco ANA Manage.

Supported Technologies on Cisco Routers

The following sections list the objects and attributes that are supported on Cisco routers in Cisco ANA 3.6 SP1 per technology:

Note For more information about the objects and attributes described in this chapter, see *Cisco Active Network Abstraction Technology Support and Information Model Reference Manual, Version 3.6 Service Pack 1.*

Base Logical Components

Table 83 summarizes base logical component support on Cisco routers in Cisco ANA 3.6 SP1.

Table 83 Base Logical Component Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Managed Element Object (IMO Name—IManagedElement)																	
IP Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Communication State	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Investigation State	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Element Category	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Element Type and Key	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Device Name	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
System Name	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
System Description	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Up Time	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Software Version	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Vendor Identity	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Memory and CPU Usage	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Agent Memory		Y			Y				Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of Device Components																	
Number of Logical Entries																	

Layer 1

Table 84 summarizes Layer 1 attribute support on Cisco routers in Cisco ANA 3.6 SP1.

Table 84 Layer 1 Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Physical Layer Object (IMO Name—IPhysicalLayer)																	
Media Type	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Clocking Source	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Maximum Speed	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Is Internal Port	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Maximum and Minimum Discarded Thresholds		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Discarded Bandwidth																	
Maximum and Minimum Dropped Thresholds		Y			Y				Y	Y	Y	Y	Y	Y	Y	Y	Y
Dropped Bandwidth																	
Maximum and Minimum Input Threshold		Y			Y				Y	Y	Y	Y	Y	Y	Y	Y	Y
Input Bandwidth			Y	Y		Y	Y	Y									
Maximum and Minimum Output Thresholds		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Output Bandwidth			Y	Y		Y	Y	Y									
Discarded and Received Input Data Counters		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Dropped and Forward Output Data Counters		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Administrative Status	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Operational Status	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Operational Status Date	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
IANA Type	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

IP

Table 85 summarizes IP attribute support on Cisco routers in Cisco ANA 3.6 SP1.

Table 85 IP Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
IP Interface Object (IMO Name—IIPInterface)																	
IP Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Subnetwork Mask	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
IP Interface Addresses		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Interface Name	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Interface Description	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
IP Interface State	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
OSPF Interface Cost		Y							Y				Y	Y			
Broadcast Address		Y							Y				Y	Y			
MTU		Y							Y								Y
Lookup Method																	
Address Resolution Type																	
ARP Timeout																	
Secured ARP																	
ICMP Mask Reply																	
IGMP Proxy																	
HSRP Groups		Y			Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
IP Multiplexing Table																	
IANA Type	Y		Y	Y		Y	Y	Y									
Routing Entry Object (IMO Name—IRoutingEntry)																	
Destination IP Subnet	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Next Hop IP Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Type	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Routing Protocol Type	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Outgoing Interface Name	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
ARP Entry Object (IMO Name—IARPEntry)																	
IP Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
MAC Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Port	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Entry Type	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y
HSRP Group Entry Object (IMO Name—HSRPGroupEntry)																	

Table 85 IP Attribute Support on Cisco Routers (continued)

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Group Number			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Port Description			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y		
Priority			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Coupled Router			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
State			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Tracking Interfaces								Y									
Virtual IP Address			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Virtual MAC Address			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		

Routing Protocols

Table 86 summarizes routing protocol attribute support on Cisco routers in Cisco ANA 3.6 SP1.

Table 86 Routing Protocol Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
BGP Neighbor Entry Object (IMO Name—IBgpNeighborEntry)																	
Remote Identifier			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Neighbor Type				Y		Y	Y	Y								Y	Y
Distributing Interfaces															Y		
Remote Address			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Remote Autonomous System			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Status			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hold Time			Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Keep Alive Time			Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
OSPF Entry Object (IMO Name—IOspfEntry)																	
Area Identifier	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
IP Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Type	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Administrative Status	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Operational Status	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Ethernet (Physical)

Table 87 summarizes support for physical Ethernet attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 87 Ethernet Physical Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Ethernet Channel Object (IMO Name—IEthernetChannel)																	
Channel Group													Y				
Channel Bandwidth																	
IANA Type													Y				
Ethernet Interface Object (IMO Name—IEthernet)																	
MAC Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Duplex Mode								Y									
Output Flow Control								Y									
Input Flow Control																	
IANA Type	Y			Y	Y	Y	Y				Y	Y		Y	Y	Y	Y

Physical Equipment

Table 88 summarizes physical equipment support on Cisco routers in Cisco ANA 3.6 SP1.

Table 88 Physical Equipment Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Module/Board Object (IMO Name—Imodule)																	
Module Name	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Module Description	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
Software Version	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
Operational Status	Y	Y	Y	Y	Y	Y			Y	Y	Y	Y	Y	Y	Y	Y	Y
Hardware Type & Version	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Managed IP Address								Y									
Redundant Equipment								Y							Y	Y	Y
Configured Redundancy								Y							Y	Y	Y
Redundancy Status	Y		Y	Y		Y	Y				Y		Y		Y	Y	Y
Operational Status Last Changed	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Supported Physical Termination Points		Y	Y						Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 88 Physical Equipment Support on Cisco Routers (continued)

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Serial Number (soft property)	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
Chassis Object (IMO Name—Ichassis)																	
Equipment Holder Type		Y	Y		Y				Y	Y	Y	Y	Y	Y			Y
Description	Y							Y							Y		
Serial Number	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			

Ethernet (Logical)

Table 89 summarizes support for logical Ethernet attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 89 Ethernet Logical Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
VLAN Encapsulation Object (IMO Name—IIEEE802)																	
VLAN Identification	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
Binding Information								Y									
Binding Status																	
IANA Type		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
Bridging Entry Object (IMO Name—IBridgeEntry)																	
Destination MAC Address	Y					Y	Y	Y	Y				Y	Y		Y	
Outgoing Interface	Y					Y	Y	Y	Y				Y	Y		Y	

ATM

Table 90 summarizes support for Asynchronous Transfer Mode (ATM) attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 90 ATM Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
ATM Interface Object (IMO Name—IAtm)																	
ATM Address																	
Interface Type															Y		
VP and VC Ranges			Y	Y		Y	Y	Y			Y						

Table 90 ATM Attribute Support on Cisco Routers (continued)

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
VC Table		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	
Cross-Connect Table																Y	
IANA Type		Y	Y		Y	Y			Y	Y	Y	Y	Y	Y		Y	
ATM VC Object (IMO Name—IAtmVc)																	
Virtual Channel Identifier		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	
Virtual Path Identifier		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Shaping Profile								Y									
Discarded and Received Input Data Counters		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y		
Dropped and Forward Output Data Counters		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y		
Ingress Traffic Descriptor		Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Egress Traffic Descriptor		Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Administrative Status		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y		
Operational Status		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
IANA Type								Y							Y		
Virtual Connection Encapsulation Object (IMO Name—IVcBasedEncapsulation)																	
Virtual Connection Interface																	
Binding Information				Y		Y	Y										
Binding Status		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
IANA Type		Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
ATM Traffic Descriptor Object (IMO Name—IAtmTrafficDescriptor)																	
Traffic Descriptor Type		Y	Y		Y				Y	Y	Y	Y	Y	Y	Y	Y	
Service Category		Y	Y		Y				Y	Y	Y	Y	Y	Y	Y	Y	
Cell Loss Priority		Y	Y		Y			Y	Y	Y	Y	Y	Y	Y	Y		
Cell Delay Variation								Y									
Cell Delay Variation Tolerance		Y	Y		Y			Y	Y	Y	Y	Y	Y	Y	Y		
Maximum High Priority and Aggregate Burst Rates		Y	Y		Y				Y	Y	Y	Y	Y	Y	Y		
Minimum High Priority and Aggregate Cell Rates		Y	Y		Y				Y	Y	Y	Y	Y	Y	Y		
Sustainable High Priority and Aggregate Cell Rates		Y	Y		Y				Y	Y	Y	Y	Y	Y	Y		
Peak High Priority and Aggregate Cell Rates		Y	Y		Y				Y	Y	Y	Y	Y	Y	Y		
Name																	

Table 90 ATM Attribute Support on Cisco Routers (continued)

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Index											Y		Y	Y	Y		
ATM Access Traffic Descriptor Object (IMO Name—IAtmAccessTrafficDescriptor)																	
Scope																	
Maximum Active VPCs and VCCs																	
Maximum Supported VPI and VCI Bits																	
Generic Flow Control Mode																	
Police Mode																	
Name																	
Index																	
ATM Logical Interface Object (IMO Name—IAtmLogicalPort/Trunk)																	
Same as ATM interface		Y	Y						Y	Y							

Frame Relay

Table 91 summarizes support for Frame Relay attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 91 Frame Relay Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Frame Relay Interface Object (IMO Name—Iframerelay/IFrTrunk)																	
Address Format																	
Maximum Supported VCs																	
Protocol Type		Y	Y		Y				Y	Y	Y	Y	Y	Y	Y		
VC Table		Y	Y		Y				Y	Y	Y	Y	Y	Y	Y		
Cross-Connect Table																	
IANA Type																	
Frame Relay VC Object (IMO Name—IFrVc)																	
Data Link Connection Identifier		Y	Y	Y	Y	Y	Y		Y	Y		Y	Y	Y	Y		
Traffic Descriptor		Y	Y		Y				Y	Y	Y	Y	Y	Y	Y		
Discard and Received Input Data Counters											Y						
Dropped and Forward Output Data Counters																	

Table 91 Frame Relay Attribute Support on Cisco Routers (continued)

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Ingress Traffic Descriptor		Y	Y						Y	Y		Y	Y	Y	Y		
Egress Traffic Descriptor		Y	Y					Y	Y	Y		Y	Y	Y	Y		
Administrative Status		Y	Y	Y	Y	Y	Y		Y	Y		Y	Y	Y	Y		
Operational Status		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y		
IANA Type				Y	Y	Y	Y				Y	Y					
Frame Relay Traffic Descriptor Object (IMO Name—IFRTrafficDescriptor)																	
Committed Rate		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y		
Excess Burst Rate		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y		
Name								Y			Y						
Index								Y									
Frame Relay Logical Interface Object (IMO Name—IFramerelayLogicalPort/Trunk)																	
Same as IFrameRelay		Y						Y	Y	Y		Y	Y	Y			

HDLC

Table 92 summarizes support for High-Level Data Link Control (HDLC) attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 92 HDLC Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
High Level Data Link Control Encapsulation Object (IMO Name—IEncapsulation)																	
Virtual Connection Interface		Y	Y		Y			Y	Y	Y	Y	Y	Y	Y	Y		Y
Binding Information								Y			Y						Y
Binding Status		Y	Y		Y				Y	Y		Y	Y	Y	Y	Y	
IANA Type		Y	Y		Y				Y	Y	Y	Y	Y	Y	Y	Y	Y

DSL

Table 93 summarizes support for digital subscriber line (DSL) attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 93 DSL Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
DSL Interface Object (IMO Name—IDsl)																	
Modulation type																	
Customer Identification																	
Traffic Descriptor	Y																
IANA Type																	
ADSL Interface Object (IMO Name—IADsl)																	
Maximum Reception and Transmission Bandwidth																	
Same as Idsl	Y																
Spectrum Traffic Descriptor																	
Traffic Descriptor	Y																
Same as IADsl																	

MPLS

Table 94 summarizes support for Multiprotocol Label Switching (MPLS) attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 94 MPLS Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
MPLS Interface Object (IMO Name—IMpls)																	
Distribution Protocol									Y	Y		Y	Y	Y	Y	Y	Y
Outer and Inner Labels											Y					Y	Y
Traffic Engineering Properties									Y	Y		Y	Y	Y	Y		
Resource Reservation Properties											Y						
IANA Type									Y	Y			Y	Y	Y	Y	Y
MPLS TE Tunnel Interface Object (IMO Name—IMplsTETunnel)																	
Destination Address									Y	Y		Y	Y	Y	Y		Y
Outgoing Interface and Label									Y	Y	Y	Y	Y	Y	Y		Y
Path Identification									Y	Y	Y	Y	Y	Y	Y		Y

Table 94 MPLS Attribute Support on Cisco Routers (continued)

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Requested Bandwidth									Y	Y	Y	Y	Y	Y	Y		Y
Measured Average Burst and Peak Bandwidth									Y	Y	Y	Y	Y	Y	Y		Y
Setup and Hold Priority									Y	Y	Y	Y	Y	Y	Y		Y
Affinity Bits and Mask									Y	Y	Y	Y	Y	Y	Y		Y
Automatic Route Announcement Status									Y	Y	Y	Y	Y	Y	Y		Y
Optimization Lock Down Status									Y	Y	Y	Y	Y	Y	Y		Y
Path Option									Y	Y	Y	Y	Y	Y	Y		Y
Name									Y	Y	Y	Y	Y	Y	Y		Y
Description									Y	Y	Y	Y	Y	Y	Y		Y
Administrative Status									Y	Y	Y	Y	Y	Y	Y		Y
Operational Status									Y	Y	Y	Y	Y	Y	Y		Y
IANA Type									Y	Y	Y		Y	Y	Y		Y
Point-to-Point Layer 2 MPLS Tunnel Interface Object (IMO Name—IPTPLayer2MplsTunnel)																	
Local and Remote Router Addresses									Y	Y		Y	Y	Y	Y		Y
Local and Remote Virtual Connection Labels									Y	Y	Y	Y	Y	Y	Y		Y
Tunnel Identification									Y	Y	Y	Y	Y	Y	Y		Y
Tunnel Status									Y	Y	Y	Y	Y	Y	Y		Y
Local and Remote Tunnel Interface											Y						
IANA Type									Y	Y			Y	Y	Y		Y
MPLS TE Object (IMO Name—IMplsTEProperties)																	
Administrative Weight									Y	Y		Y	Y	Y	Y		Y
Attributes Identifier											Y						
Signaling Protocol									Y	Y		Y	Y	Y	Y		Y
Available Physical and Reservable Bandwidth									Y	Y	Y	Y	Y	Y	Y		Y
Reserved Bandwidth									Y	Y	Y	Y	Y	Y	Y		Y
MPLS TE Allocation Entry Object (IMO Name—IMplsTEPropertiesAllocationEntry)																	
Priority Level											Y						
Allocated and Cumulative Bandwidth																	
RSVP Properties Object (IMO Name—IRsvpProperties)																	
Allocated Bandwidth																	

Table 94 MPLS Attribute Support on Cisco Routers (continued)

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Maximum Per Flow and Total Allowed Bandwidth																	
LSE Entry Object (IMO Name—ILSEEntry)																	
Incoming Label									Y	Y		Y	Y	Y	Y	Y	Y
Outgoing Interface and Label									Y	Y	Y	Y	Y	Y	Y	Y	Y
Switching Action									Y	Y	Y	Y	Y	Y	Y	Y	Y
Next Hop IP Address									Y	Y	Y	Y	Y	Y	Y	Y	Y
MPLS Aggregate Entry Object (IMO Name—IMplsAggregateEntry)																	
Virtual Routing Entity									Y	Y	Y	Y	Y	Y	Y	Y	Y
Incoming Label									Y	Y	Y	Y	Y	Y	Y	Y	Y
Outgoing Interface and Label									Y	Y	Y	Y	Y	Y	Y	Y	Y
Switching Action									Y	Y	Y	Y	Y	Y	Y	Y	Y
Next Hop IP Address									Y	Y	Y	Y	Y	Y	Y	Y	Y
MPLS TE Tunnel Segment Object (IMO Name—IMplsTESegment)																	
Segment Type									Y	Y	Y	Y	Y	Y	Y		
Measured Average Burst and Peak Bandwidth									Y	Y	Y	Y	Y	Y	Y		
Path Identification									Y	Y	Y	Y	Y	Y	Y		
Name									Y	Y	Y	Y	Y	Y	Y		

VPN

Table 95 summarizes support for virtual private network (VPN) attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 95 VPN Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
VRF Entity Object (IMO Name—IVrf)																	
Name									Y	Y	Y	Y	Y	Y	Y	Y	Y
Route Distinguisher									Y	Y	Y	Y	Y	Y	Y	Y	Y
Virtual Routing Entry Object (IMO Name—IVrfEntry)																	
Next Hop BGP Address									Y	Y	Y	Y	Y	Y	Y	Y	Y
Incoming and Outgoing Inner Label									Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 95 VPN Attribute Support on Cisco Routers (continued)

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Outer Label									Y	Y	Y	Y	Y	Y	Y	Y	Y
Destination IP Subnet									Y	Y	Y	Y	Y	Y	Y	Y	Y
Next Hop IP Address									Y	Y	Y	Y	Y	Y	Y	Y	Y
Type									Y	Y	Y	Y	Y	Y	Y	Y	Y
Routing Protocol Type									Y	Y	Y	Y	Y	Y	Y	Y	Y
Outgoing Interface Name									Y	Y	Y	Y	Y	Y	Y	Y	Y
Multi-Protocol BGP Entity Object (IMO Name—IMpBgp)																	
BGP Identifier									Y	Y	Y	Y	Y	Y	Y	Y	Y
Local Autonomous System									Y	Y	Y	Y	Y	Y	Y	Y	Y
Cross Virtual Routing Object (IMO Name—ICrossVrfRoutingEntry)																	
Outgoing Virtual Routing Entity Identifier											Y						
Incoming and Outgoing Virtual Routing Tags																	
Destination IP Subnet									Y	Y		Y	Y	Y	Y	Y	Y
Next Hop IP Address									Y	Y	Y	Y	Y	Y	Y	Y	Y
Type									Y	Y	Y	Y	Y	Y	Y	Y	Y
Routing Protocol Type									Y	Y	Y	Y	Y	Y	Y	Y	Y
Outgoing Interface Name											Y					Y	Y

ACL

Table 96 summarizes support for access list (ACL) attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 96 ACL Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Access List Entry Object (IMO Name—IAccessListEntry)																	
Entry Identification		Y	Y	Y	Y	Y	Y		Y	Y		Y	Y	Y	Y	Y	Y
Action Logic		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
Source and Destination Address		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
Source and Destination Wildcard		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
Protocol Type		Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
Source and Destination Port Ranges		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 96 ACL Attribute Support on Cisco Routers (continued)

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Source and Destination Port Action		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Protocol Specific Info		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Differential Services Code Points		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Type of Service		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Precedence		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Matches		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Q-in-Q (Switch Port)

Table 97 summarizes support for Q-in-Q (also known as stacked VLAN) switch port attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 97 Q-in-Q Switch Port Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
VLAN Interface Object (IMO Name—IVlanInterface)																	
Mode													Y				
Native Identification													Y				
Customer Edge Identification																	
Service Provider Identification																	
VLAN Table																	
IANA Type																	
VLAN Entry Object (IMO Name—IVlanEntry)																	
Identification													Y				
Encapsulation Type													Y				

Q-in-Q (Routed Switch)

Table 98 summarizes support for Q-in-Q (also known as stacked VLAN) routed switch attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 98 Q-in-Q Routed Switch Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
VLAN Multiplexer Object (IMO Name—IVlanEncapMux)																	
IANA Type									Y				Y				
VLAN Encapsulation Object (IMO Name—IEEE802)																	
VLAN Identification																	
Binding Information																	
Binding Status																	
IANA Type									Y				Y				

STP

Table 99 summarizes support for Spanning Tree Protocol (STP) attributes on Cisco routers in Cisco ANA 3.6 SP1.

Table 99 STP Attribute Support on Cisco Routers

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
STP Service Object (IMO Name—IStpService)																	
Protocol Type																	
Current and Bridge													Y				
Current and Bridge Hello Time													Y				
Current and Bridge Forward Delay													Y				
Bridge Information Table													Y				
MST Service Object (IMO Name—IMstService)																	
Protocol Properties																	
Same as IStpService																	
MST Properties Object (IMO Name—ImstProperties)																	
Force Version													Y				
Configuration Format, Region Name and Revision Level													Y				
External Root Cost																	

Table 99 STP Attribute Support on Cisco Routers (continued)

Attribute	800	1000	1600	1700	1800	2500	2600	2800	3600	3700	7200	7400	7600	10000	12000	XR 12000	CRS-1
Maximum Instances																	
STP Instance Information Object (IMO Name—IStpInstanceInfo)																	
Object Identification																	
Identification																	
Priority																	
Designated Parent and Root Bridges													Y				
Root Cost													Y				
Is Root													Y				
Root Port Identification													Y				
Port Information Table																	
MST Protocol Instance Information Object (IMO Name—IMstInstanceInfo)																	
Instance Identification													Y				
same as IStpBridgeInfo													Y				
Per VLAN Spanning Tree Protocol Instance Information Object (IMO Name—IPvstpInstanceInfo)																	
Protocol Type													Y				
Current and Bridge Maximum Age													Y				
Current and Bridge Hello Time													Y				
Current and Bridge Forward Delay													Y				
same as IStpInstanceInfo													Y				
RSTP Instance Information Object (IRstpInstanceInfo)																	
Force Version													Y				
same as IStpInstanceInfo													Y				

Support Information for Cisco Switches

This chapter contains the Virtual Network Element (VNE) device support information in Cisco ANA 3.6 SP1 for the following devices:

For information about the technologies supported by each of these VNEs, see Supported Technologies on Cisco Switches, page 182.

Cisco Catalyst 2900 Series Switches

This section includes the following information about Cisco Catalyst 2900 Series switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco Catalyst 2900 Series—Supported Software Versions

Table 100 lists the supported software versions for Cisco Catalyst 2900 Series switches in Cisco ANA 3.6 SP1.

Table 100 Supported Software Versions for Cisco Catalyst 2900 Series Switches

Software Version	Certification Level
IOS 12.2(25)FX	S
12.0*	S
12.1*	S
CatOS 9.00.04	S
12.2*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco Catalyst 2900 Series—Supported Topologies

The following topologies are supported for Cisco Catalyst 2900 Series switches in Cisco ANA 3.6 SP1:

- MAC
- CDP

Cisco Catalyst 2900 Series—Supported Modules

Table 101 lists the supported modules for Cisco Catalyst 2900 Series switches in Cisco ANA 3.6 SP1.

Table 101 Supported Modules for Cisco Catalyst 2900 Series Switches

Module Name	Module Description	Certification Level
WS-C2912-XL	12 fixed autosensing 10/100 ports	S
WS-C2924M-XL	24 fixed autosensing 10/100 ports 2 expansion slots	S

Table 101 Supported Modules for Cisco Catalyst 2900 Series Switches (continued)

Module Name	Module Description	Certification Level
WS-C2948G	48 10/100 ports and 2 fixed, gigabit interface converter (GBIC)-based 1000BASE-X uplink ports 1.5 RU switch Catalyst OS installed	S
WS-X2948	Switching Supervisor	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco Catalyst 2900 Series—Supported Technologies, page 143.

Cisco Catalyst 2900 Series—Supported Technologies

The following technologies are supported by the Cisco Catalyst 2900 Series in Cisco ANA 3.6 SP1:

Cisco Catalyst 2900 Series—Supported Events

Table 102 lists the supported service events for Cisco Catalyst 2900 Series switches in Cisco ANA 3.6 SP1.

Table 102 Service Events for Cisco Catalyst 2900 Series Switches

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Card up/down	Y

Cisco ME 3400 Series Ethernet Access Switches

This section includes the following information about Cisco ME 3400 Series switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco ME 3400 Series—Supported Software Versions

Table 103 lists the supported software versions for Cisco ME 3400 Series switches in Cisco ANA 3.6 SP1.

Table 103 Supported Software Versions for Cisco ME 3400 Series Switches

Software Version	Certification Level
12.3(23)S1	S
12.3(22)S	S
12.3(23)	S
12.3(23)S2	S
12.3(23)S3	S
12.2(25)SEG	S
12.2(35)SE1	S
12.2(35)SE	S
12.2(35)SE3	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco ME 3400 Series—Supported Topologies

The following topologies are supported for Cisco ME 3400 Series switches in Cisco ANA 3.6 SP1:

- MAC
- CDP

Cisco ME 3400 Series—Supported Modules

Table 104 lists the supported modules for Cisco ME 3400 Series switches in Cisco ANA 3.6 SP1.

Table 104 Supported Modules for Cisco ME 3400 Series Switches

Module Name	Module Description	Certification Level
ME-3400G-12CS-A	12 dual-purpose ports (10/100/1000 and Small Form-Factor Pluggable [SFP]) and 4 SFP uplinks	V
ME-3400G-12CS-DC	12 dual-purpose ports (10/100/1000 and SFP) and 4 SFP uplinks	S
ME-3400G-2CS	2 dual-purpose ports (10/100/1000 and SFP) and 2 SFP uplinks	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco ME 3400 Series—Supported Technologies, page 145.

Cisco ME 3400 Series—Supported Technologies

The following technologies are supported by the Cisco ME 3400 Series in Cisco ANA 3.6 SP1:

Cisco ME 3400 Series—Supported Events

Table 105 lists the supported service events for Cisco ME 3400 Series switches in Cisco ANA 3.6 SP1.

Table 105 Service Events for Cisco ME 3400 Series Switches

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
Card up/down	Y

Cisco Catalyst 3500 XL Series Switches

This section includes the following information about Cisco Catalyst 3500 XL Series switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco Catalyst 3500 XL Series—Supported Software Versions

Table 106 lists the supported software versions for Cisco Catalyst 3500 XL Series switches in Cisco ANA 3.6 SP1.

Table 106 Supported Software Versions for Cisco Catalyst 3500 XL Series Switches

Software Version	Certification Level
12.1*	S
12.0*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco Catalyst 3500 XL Series—Supported Topologies

The following topologies are supported for Cisco Catalyst 3500 XL Series switches in Cisco ANA 3.6 SP1:

- MAC
- CDP

Cisco Catalyst 3500 XL Series—Supported Technologies

The following technologies are supported by the Cisco Catalyst 3500 XL Series in Cisco ANA 3.6 SP1:

- Base Logical Components, page 183
- Layer 1, page 184
- IP, page 185
- Ethernet (Physical), page 187
- Physical Equipment, page 187
- Ethernet (Logical), page 188

Cisco Catalyst 3500 XL Series—Supported Events

Table 107 lists the supported service events for Cisco Catalyst 3500 XL Series switches in Cisco ANA 3.6 SP1.

Table 107 Service Events for Cisco Catalyst 3500 XL Series Switches

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
Card up/down	Y

Cisco Catalyst 3550 Series Switches

This section includes the following information about Cisco Catalyst 3550 Series switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco Catalyst 3550 Series—Supported Software Versions

Table 108 lists the supported software versions for Cisco Catalyst 3550 Series switches in Cisco ANA 3.6 SP1.

Table 108 Supported Software Versions for Cisco Catalyst 3550 Series Switches

Software Version	Certification Level
12.1(11)EA*	S
12.1(12c)EA1	S
12.1(13)EA*	S
12.1(14)AX3	S
12.1(14)EA1	S
12.1(19)EA*	S
12.1(20)EA*	S
12.1(22)EA*	S
12.1(22)EA6	S
12.1(22)EA8a	V
12.2*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco Catalyst 3550 Series—Supported Topologies

The following topologies are supported for Cisco Catalyst 3550 Series switches in Cisco ANA 3.6 SP1:

- MAC
- CDP

Cisco Catalyst 3550 Series—Supported Technologies

The following technologies are supported by the Cisco Catalyst 3550 Series in Cisco ANA 3.6 SP1:

- Base Logical Components, page 183
- Layer 1, page 184
- IP, page 185
- Ethernet (Physical), page 187
- Physical Equipment, page 187
- Ethernet (Logical), page 188

- Q-in-Q (Switch Port), page 195
- STP, page 196

Cisco Catalyst 3550 Series—Supported Events

Table 109 lists the supported service events for Cisco Catalyst 3550 Series switches in Cisco ANA 3.6 SP1.

Table 109 Service Events for Cisco Catalyst 3550 Series Switches

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Cloud Problem	N
Card up/down	Y

Cisco Catalyst 3560 Series Switches

This section includes the following information about Cisco Catalyst 3560 Series switches:

- Cisco Catalyst 3560 Series—Supported Software Versions, page 151
- Cisco Catalyst 3560 Series—Supported Topologies, page 151
- Cisco Catalyst 3560 Series—Supported Modules, page 152
- Cisco Catalyst 3560 Series—Supported Technologies, page 152
- Cisco Catalyst 3560 Series—Supported Events, page 153

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco Catalyst 3560 Series—Supported Software Versions

Table 110 lists the supported software versions for Cisco Catalyst 3560 Series switches in Cisco ANA 3.6 SP1.

Table 110 Supported Software Versions for Cisco Catalyst 3560 Series Switches

Software Version	Certification Level
12.1(13)EA1a	S
12.1(14)EA1a	S
12.1(25)EW	S
12.1(6)EA1a	S
12.2(25)SED	S
12.1(22)EA5	S
12.1(22)EA8a	S
12.2(25)SEE2	S
12.0(0)ST*	S
12.0*	S
12.1*	S
12.2*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco Catalyst 3560 Series—Supported Topologies

The following topologies are supported for Cisco Catalyst 3560 Series switches in Cisco ANA 3.6 SP1:

- MAC
- CDP

Cisco Catalyst 3560 Series—Supported Modules

Table 111 lists the supported modules for Cisco Catalyst 3560 Series switches in Cisco ANA 3.6 SP1.

Table 111 Supported Modules for Cisco Catalyst 3560 Series Switches

Module Name	Module Description	Certification Level
WS-C3560-24PS	24 Ethernet 10/100 ports and 2 SFP-based Gigabit Ethernet ports	S
WS-C3560-48PS	48 Ethernet 10/100 ports and 4 SFP-based Gigabit Ethernet ports	S
WS-C3560G-24PS	24 Ethernet 10/100/1000 ports and 4 SFP-based Gigabit Ethernet ports	S
WS-C3560G-24TS	24 Ethernet 10/100/1000 ports and 4 SFP-based Gigabit Ethernet ports	S
WS-C3560G-48TS	48 Ethernet 10/100/1000 ports and 4 SFP-based Gigabit Ethernet ports	S
WS-C3560G-48PS	48 Ethernet 10/100/1000 ports and 4 SFP-based Gigabit Ethernet ports	S
WS-C3560-24PS	24 Ethernet 10/100 ports and 2 SFP-based Gigabit Ethernet ports	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco Catalyst 3560 Series—Supported Technologies, page 152.

Cisco Catalyst 3560 Series—Supported Technologies

The following technologies are supported by the Cisco Catalyst 3560 Series in Cisco ANA 3.6 SP1:

Cisco Catalyst 3560 Series—Supported Events

Table 112 lists the supported service events for Cisco Catalyst 3560 Series switches in Cisco ANA 3.6 SP1.

Table 112 Service Events for Cisco Catalyst 3560 Series Switches

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
Cloud Problem	N
Card up/down	Y

Cisco Catalyst 3750 Series Switches

This section includes the following information about Cisco Catalyst 3750 Series switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco Catalyst 3750 Series—Supported Software Versions

Table 113 lists the supported software versions for Cisco Catalyst 3750 Series switches in Cisco ANA 3.6 SP1.

Table 113 Supported Software Versions for Cisco Catalyst 3750 Series Switches

Software Version	Certification Level
IOS 12.2(25)EY3	S
IOS 12.1*	S
IOS 12.2*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco Catalyst 3750 Series—Supported Topologies

The following topologies are supported for Cisco Catalyst 3750 Series switches in Cisco ANA 3.6 SP1:

- MAC
- CDP

Cisco Catalyst 3750 Series—Supported Technologies

The following technologies are supported by the Cisco Catalyst 3750 Series in Cisco ANA 3.6 SP1:

- Base Logical Components, page 183
- Layer 1, page 184
- IP, page 185
- Ethernet (Physical), page 187
- Physical Equipment, page 187
- Ethernet (Logical), page 188
- Q-in-Q (Switch Port), page 195
- Q-in-Q (Routed Switch), page 195

Cisco Catalyst 3750 Series—Supported Events

Table 114 lists the supported service events for Cisco Catalyst 3750 Series switches in Cisco ANA 3.6 SP1.

Table 114 Service Events for Cisco Catalyst 3750 Series Switches

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
Card up/down	Y

Cisco Catalyst 3750 Metro Series Switches

This section includes the following information about Cisco Catalyst 3750 Metro Series switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco Catalyst 3750 Metro Series—Supported Software Versions

Table 115 lists the supported software versions for Cisco Catalyst 3750 Metro Series switches in Cisco ANA 3.6 SP1.

Table 115 Supported Software Versions for Cisco Catalyst 3750 Metro Series Switches

Software Version	Certification Level
IOS 12.2(25)EY3	S
IOS 12.1(14)AX*	S
IOS 12.2(25)*	S
IOS 12.2(35)*	S
IOS 12.2(37)*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco Catalyst 3750 Metro Series—Supported Topologies

The following topologies are supported for Cisco Catalyst 3750 Metro Series switches in Cisco ANA 3.6 SP1:

- MAC
- CDP

Cisco Catalyst 3750 Metro Series—Supported Modules

Table 116 lists the supported modules for Cisco Catalyst 3750 Metro Series switches in Cisco ANA 3.6 SP1.

Table 116 Supported Modules for Cisco Catalyst 3750 Metro Series Switches

Module Name	Module Description	Certification Level
catalyst375024ME	Metro Ethernet Catalyst 3750 Module. 24-10/100 + 2 SFP (Small Formfactor Pluggable) ports for downlinks	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco Catalyst 3750 Metro Series—Supported Technologies, page 157.

Cisco Catalyst 3750 Metro Series—Supported Technologies

The following technologies are supported by the Cisco Catalyst 3750 Metro Series in Cisco ANA 3.6 SP1:

Cisco Catalyst 3750 Metro Series—Supported Events

Table 117 lists the supported service events for Cisco Catalyst 3750 Metro Series switches in Cisco ANA 3.6 SP1.

Table 117 Service Events for Cisco Catalyst 3750 Metro Series Switches

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
BGP Neighbor Down	Y
Card up/down	Y

Cisco Catalyst 4000 Series Switches

This section includes the following information about Cisco Catalyst 4000 Series switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco Catalyst 4000 Series—Supported Software Versions

Table 118 lists the supported software versions for Cisco Catalyst 4000 Series switches in Cisco ANA 3.6 SP1.

Table 118 Supported Software Versions for Cisco Catalyst 4000 Series Switches

Software Version	Certification Level
IOS 12.1(12c)EW1	S
IOS 12.2(20)EWA1	S
IOS 12.2(25)SG	S
IOS 12.2*	S
IOS 12.1*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco Catalyst 4000 Series—Supported Topologies

The following topologies are supported for Cisco Catalyst 4000 Series switches in Cisco ANA 3.6 SP1:

- MAC
- CDP

Cisco Catalyst 4000 Series—Supported Modules

Table 119 lists the supported modules for Cisco Catalyst 4000 Series switches in Cisco ANA 3.6 SP1.

Table 119 Supported Modules for Cisco Catalyst 4000 Series Switches

Module Name	Module Description	Certification Level
WS-X4124-FX-MT	FE Switching Module, 24-port 100FX (MTRJ)	S
WS-X4148-FX-MT	FE Switching Module, 48-100FX MMF (MTRJ)	S
WS-X4148-RJ	10/100 Fast Ethernet Module, 48 Ports (RJ-45)	S
WS-X4148-RJ21	Telco switch module, 48-port 10/100 (4xRJ21)	S
WS-X4148-RJ45V	Inline Power 10/100, 48-port (RJ45)	S
WS-X4232-GB-RJ	E/FE/GE Module, 2-GE (GBIC), 32-10/100 FE (RJ-45)	S
WS-X4232-RJ-XX	FE Base Module, 32-10/100(RJ45)+ Modular Uplink slot	S
WS-X4232-L3	E/FE/GE L3 Module, 2-GE(GBIC), 32-10/100 (RJ45)	S
WS-X4306-GB	Gigabit Ethernet Module, 6 Ports (GBIC)	S
WS-X4412-2GB-T	GE Module, 12-1000T (RJ45)+2-1000X (GBIC Slot)	S
WS-X4424-GB-RJ-45	24 port 10/100/1000 Auto-Sensing Module (RJ45)	S
WS-X4448-GB-RJ45	48 port 10/100/1000 Auto-Sensing Module (RJ45)	S
WS-X4418-GB	GE Module, Server Switching 18 Ports (GBIC)	S
WS-U4504-FX-MT	FE Uplink Daughter Card, 4-port 100FX (MTRJ)	S
WS-X4014	Catalyst 4006 Supervisor 3, Spare	S
WS-X4302-GB	2-port 1000BASE-X (GBIC) Gigabit Ethernet	S
WS-X4424-GB-RJ45	24-port 10/100/1000BASE-T Gigabit Ethernet switching module	S
WS-X4448-GB-LX	48-port 1000BASE-LX (SFP included) Gigabit Ethernet switching module	S
WS-X4248-RJ45V	48-port PoE 10/100BASE-TX switching module	S
WS-X4248-RJ21V	48-port PoE 10/100 BASE-TX switching module	S
WS-X4548-GB-RJ45V	48-port PoE 10/100/1000BASE-T switching module	S
WS-X4548-GB-RJ45	48-port Gigabit Ethernet 10/100/1000BASE-T switching module	S
CWDM-SFP-1470	CWDM SFP 1470 nm, Gigabit Ethernet and 1G/2G FC	S

Table 119 Supported Modules for Cisco Catalyst 4000 Series Switches (continued)

Module Name	Module Description	Certification Level
CWDM-SFP-1490	CWDM SFP 1490 nm, Gigabit Ethernet and 1G/2G FC	S
CWDM-SFP-1510	CWDM SFP 1510 nm, Gigabit Ethernet and 1G/2G FC	S
CWDM-SFP-1530	CWDM SFP 1530 nm, Gigabit Ethernet and 1G/2G FC	S
CWDM-SFP-1550	CWDM SFP 1550 nm, Gigabit Ethernet and 1G/2G FC	S
CWDM-SFP-1570	CWDM SFP 1570 nm, Gigabit Ethernet and 1G/2G FC	S
CWDM-SFP-1590	CWDM SFP 1590 nm, Gigabit Ethernet and 1G/2G FC	S
CWDM-SFP-1610	CWDM SFP 1610 nm, Gigabit Ethernet and 1G/2G FC	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco Catalyst 4000 Series—Supported Technologies, page 160.

Cisco Catalyst 4000 Series—Supported Technologies

The following technologies are supported by the Cisco Catalyst 4000 Series in Cisco ANA 3.6 SP1:

Cisco Catalyst 4000 Series—Supported Service Events

Table 120 lists the supported service events (also called service alarms) for Cisco Catalyst 4000 Series switches in Cisco ANA 3.6 SP1.

Table 120 Service Events for Cisco Catalyst 4000 Series Switches

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Card up/down	Y

Cisco Catalyst 4500 Series Switches

This section includes the following information about Cisco Catalyst 4500 Series switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco Catalyst 4500 Series—Supported Software Versions

Table 121 lists the supported software versions for Cisco Catalyst 4500 Series switches in Cisco ANA 3.6 SP1.

Table 121 Supported Software Versions for Cisco Catalyst 4500 Series Switches

Software Version	Certification Level
IOS 12.1(12c)EW1	V
IOS 12.2(20)EWA1	V
IOS 12.2(25)SG	V
IOS 12.2*	S
IOS 12.1*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco Catalyst 4500 Series—Supported Topologies

The following topologies are supported for Cisco Catalyst 4500 Series switches in Cisco ANA 3.6 SP1:

- MAC
- CDP

Cisco Catalyst 4500 Series—Supported Modules

Table 122 lists the supported modules for Cisco Catalyst 4500 Series switches in Cisco ANA 3.6 SP1.

Table 122 Supported Modules for Cisco Catalyst 4500 Series Switches

Module Name	Module Description	Certification Level
WS-X4013+	Catalyst 4500 Supervisor II-Plus (IOS), 2GE,Console(RJ-45)	S
WS-X4013+TS	Catalyst 4503 SupII-Plus-TS, 12 10/100/1000 PoE+8 SFP slots	S
WS-X4014	Supervisor Engine III	S
WS-X4515	Catalyst 4500 Supervisor IV (2 GE),Console(RJ-45)	S
WS-X4516	Catalyst 4500 Supervisor V (2 GE),Console(RJ-45)	S

Table 122 Supported Modules for Cisco Catalyst 4500 Series Switches (continued)

Module Name	Module Description	Certification Level
WS-X4516-10GE	Catalyst 4500 Supervisor V-10GE, 2x10GE (X2) and 4x1GE (SFP)	S
WS-X4124-FX-MT	24-Port 100BASE-FX Fast Ethernet Switching Module	S
WS-X4148-FX-MT	Catalyst 4500 FE Switching Module, 48-100FX MMF(MTRJ)	S
WS-X4148-RJ	Catalyst 4500 10/100 Auto Module, 48-Ports (RJ-45)	S
WS-X4148-RJ21	Catalyst 4500 10/100 Module, 48-Ports Telco (4xRJ21)	S
WS-X4148-RJ45V	10/100BASE-TX Fast Ethernet switching module with Cisco pre-standard PoE	S
WS-X4248-FE-SFP	Catalyst 4500 48-Port 100BASE-X (SFPs Optional)	S
WS-X4224-RJ45V	Catalyst 4500 10/100 PoE 802.3af 24-ports (RJ45)	S
WS-X4248-RJ21V	Catalyst 4500 PoE 802.3af 10/100, 48-Ports (RJ21)	S
WS-X4248-RJ45V	Catalyst 4500 PoE 802.3af 10/100, 48-Ports (RJ45)	S
WS-X4232-GB-RJ	Catalyst 4500 32-10/100 (RJ-45),2-GE(GBIC)	S
WS-X4232-RJ-XX	Catalyst 4500 10/100 Module,32-ports(RJ45)+Modular uplinks	S
WS-U4504-FX-MT	Catalyst 4500 4-port 100FX(MTRJ) Uplink for WS-X4232-RJ-XX	S
WS-X4302-GB	Catalyst 4500 Gigabit Ethernet Module, 2-Ports (GBIC)	S
WS-X4306-GB	Catalyst 4500 Gigabit Ethernet Module, 6-Ports (GBIC)	S
WS-X4506-GB-T	Catalyst 4500 6-Port 10/100/1000 PoE or SFP (Optional)	S
WS-X4412-2GB-T	1000BASE-T plus 1000BASE-X Gigabit Ethernet switching module	S
WS-X4418-GB	Catalyst 4500 GE Module, Server Switching 18-Ports (GBIC)	S
WS-X4424-GB-RJ45	Catalyst 4500 24-port 10/100/1000 Module (RJ45)	S
WS-X4448-GB-LX	1000BASE-X Gigabit Ethernet switching module	S
WS-X4448-GB-RJ45	Catalyst 4500 48-Port 10/100/1000 Module (RJ45)	S

Table 122 Supported Modules for Cisco Catalyst 4500 Series Switches (continued)

Module Name	Module Description	Certification Level
WS-X4524-GB-RJ45V	Catalyst 4500 PoE 802.3af 10/ 100/1000 24-ports (RJ45)	S
WS-X4548-GB-RJ45	Catalyst 4500 Enhanced 48-Port 10/100/1000 Base-T (RJ-45)	S
WS-X4448-GB-SFP	Catalyst 4500 48-Port 1000Base-X (SFPs Optional)	S
WS-X4548-GB-RJ45V	Catalyst 4500 PoE 802.3af 10/100/1000, 48-Ports (RJ45)	S
WS-X4604-GWY	Catalyst 4000 Access Gateway Module	S
WS-X4232-L3	Layer 3 Services Module	S
WS-X4148-FE-BD-LC	48-Port 100BASE-BX10-D Fast Ethernet Switching Module	S
WS-X4148-FE-LX-MT	48-Port 100Base-LX-MT Fast Ethernet Switching Module	S
WS-X4124-RJ45	24-Port 10/100BASE-TX Fast Ethernet Switching Module	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco Catalyst 4500 Series—Supported Technologies, page 164.

Cisco Catalyst 4500 Series—Supported Technologies

The following technologies are supported by the Cisco Catalyst 4500 Series in Cisco ANA 3.6 SP1:

Cisco Catalyst 4500 Series—Supported Events

Table 123 lists the supported service events for Cisco Catalyst 4500 Series switches in Cisco ANA 3.6 SP1.

Table 123 Service Events for Cisco Catalyst 4500 Series Switches

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Card up/down	Y

Cisco ME 4900 Series Ethernet Access Switches

This section includes the following information about Cisco ME 4900 Series switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco ME 4900 Series—Supported Software Versions

Table 124 lists the supported software versions for Cisco ME 4900 Series switches in Cisco ANA 3.6 SP1.

Table 124 Supported Software Versions for Cisco ME 4900 Series Switches

Software Version	Certification Level
IOS 12.2(31)SG	S
IOS 12.2(31)SGA	S
IOS 12.2(31)SGA1	S
IOS 12.2*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco ME 4900 Series—Supported Topologies

The following topologies are supported for Cisco ME 4900 Series switches in Cisco ANA 3.6 SP1:

- MAC
- CDP

Cisco ME 4900 Series—Supported Technologies

The following technologies are supported by the Cisco ME 4900 Series in Cisco ANA 3.6 SP1:

- Base Logical Components, page 183
- Layer 1, page 184
- IP, page 185
- Ethernet (Physical), page 187
- Physical Equipment, page 187
- Q-in-Q (Switch Port), page 195
- STP, page 196

Cisco ME 4900 Series—Supported Events

Table 125 lists the supported service events for Cisco ME 4900 Series switches in Cisco ANA 3.6 SP1.

Table 125 Service Events for Cisco ME 4900 Series Switches

Event Name	Expedited
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
Cloud Problem	N
Layer 2 Tunnel Down	N
Card up/down	Y

Cisco Catalyst 6500 Series (IOS) Switches

This section includes the following information about Cisco Catalyst 6500 Series (IOS) switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco Catalyst 6500 Series (IOS)—Supported Software Versions

Table 126 lists the supported software versions for Cisco Catalyst 6500 Series (IOS) switches in Cisco ANA 3.6 SP1.

Table 126 Supported Software Versions for Cisco Catalyst 6500 Series (IOS) Switches

Software Version	Certification Level
IOS 12.1(20)E3	S
IOS 12.2(18)SXD	V
IOS 12.2(18)SXD2	S
IOS 12.2(18)SXD5	V
IOS 12.2(18)SXE6b	V
IOS 12.2(33)SRA	V
IOS 12.2(33)SRA2	V
IOS 12.2(33)SRB	V
IOS 12.2(18)SXE*	S
IOS 12.2(18)SXF*	S
IOS 12.2(33*	S
IOS 12.3*	S
IOS 12.4*	S
IOS 12.1(13)E6	S
IOS 12.2(18)SXE	S
IOS 12.2(33)SRB1	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco Catalyst 6500 Series (IOS)—Supported Topologies

The following topologies are supported for Cisco Catalyst 6500 Series (IOS) switches in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP
- MPLS

Cisco Catalyst 6500 Series (IOS)—Supported Modules

Table 127 lists the supported modules for Cisco Catalyst 6500 Series (IOS) switches in Cisco ANA 3.6 SP1.

Table 127 Supported Modules for Cisco Catalyst 6500 Series (IOS) Switches

Module Name	Module Description	Certification Level
7600-ES20-PROC	7600 ES20 PROC FRU	S
7600-MSFC4	c7600 MSFC4 Daughterboard	S
7600-SIP-200	SPA Interface Processor-200	S
7600-SIP-400	SPA Interface Processor-400	S
7600-SIP-600	SPA Interface Processor-600	S
OSM-12CT3T1	12-port channelized/unchannelized CT3-T1	S
OSM-1CHOC12T3-SI	1-port channelized OC-12, SM-IR	S
OSM-1OC48-POS-SL	Enhanced 1-port OC-48/STM-16 SONET/SDH OSM, SM-LR	S
OSM-1OC48-POS-SS	Enhanced 1-port OC-48/STM-16 SONET/SDH OSM, SM-SR	S
OSM-2+4GE-WAN	4-port Gigabit Ethernet WAN (GBIC) with two Layer 2 LAN ports; CEF256	S
OSM-2OC12-ATM-MM	Enhanced 2-port OC-12/STM-4 ATM OSM, MM	S
OSM-2OC12-ATM-SI	Enhanced 2-port OC-12/STM-4 ATM OSM, SM-IR	S
OSM-4OC12-POS-SI	Enhanced 4-port OC-12c/STM-4c POS, SM-IR; CEF256	S
OSM-4OC3-POS-SI	Enhanced 4-port OC-3c/STM-1c POS, SM-IR;	S
PA-1FE-TX	1-port Fast Ethernet port adapter	S
PA-2FE-TX	2-port Fast Ethernet port adapter	S
PA-4T	T1/E1 port adapters	S
PA-A3-E3	ATM with traffic shaping port adapters	S
PA-A3-T3	ATM with traffic shaping port adapters	S
PA-MC-4T1	T1/E1 port adapters	S
PA-MC-8T1	T1/E1 port adapters	S
PA-MC-STM-1	Multichannel STM-1 port adapters	S
PA-POS-2OC3	2-port POS OC3c/STM1 port adapter	S
SFP-OC3-IR1	Intermediate range, single-mode fiber	S
SFP-OC3-LR1	Long range, single-mode fiber	S
SFP-OC3-MM	Short range, multimode fiber	S
SPA-10X1GE	10-port Gigabit Ethernet SPA, SFP Optics	S

Table 127 Supported Modules for Cisco Catalyst 6500 Series (IOS) Switches (continued)

Module Name	Module Description	Certification Level
SPA-10X1GE-V2	10-port Gigabit Ethernet SPA, SFP Optics	S
SPA-1XCHSTM1/OC3	1-port Channelized STM1/OC3 to DS0 SPA	S
SPA-1XOC12-ATM	1-Port OC-12c/STM-4c ATM SPA	S
SPA-1XOC12-POS	1-port OC-12c/STM-4c POS SPA	S
SPA-1XOC48-ATM	1 port OC-48c/STM-16 ATM SPA	S
SPA-1XTENGE-XFP	1-port 10 Gigabit Ethernet SPA, LANPHY XFP Optics	S
SPA-24CHT1-CE-ATM	24-Port Channelized T1/E1/J1 ATM CEoP SPA	S
SPA-2X1GE	2-port Gigabit Ethernet SPA, SFP Optics	S
SPA-2X1GE-V2	2-port Gigabit Ethernet SPA, SFP Optics	S
SPA-2XCT3/DS0	2-port Channelized T3 to DS0 SPA	S
SPA-2XOC3-ATM	2-port OC-3c/STM-1c ATM SPA	S
SPA-2XOC3-POS	2-port OC-3c/STM-1c POS SPA	S
SPA-2XOC48POS/RPR	1-port 10 Gigabit Ethernet Shared Port Adapter XFP based	S
SPA-2XOC48POSRPR	2 port OC-48 POS/RPR SPA with SFP Optics	S
SPA-2XT3/E3	2-port Clear Channel T3/E3 SPA	S
SPA-4X1FE-TX-V2	4-port 10/100 Ethernet SPA TX	S
SPA-4XCT3/DS0	4-port Channelized T3 to DS0 SPA	S
SPA-4XOC3-ATM	4-port OC-3c/STM-1c ATM SPA	S
SPA-4XOC3-POS	4-port OC-3c/STM-1c POS SPA	S
SPA-4XOC48POSRPR	4-port OC-48c/STM-16 POS/DPT/RPR SPA	S
SPA-4XT3/E3	4-port Clear Channel T3/E3 SPA	S
SPA-5X1GE	5-port Gigabit Ethernet SPA, SFP Optics	S
SPA-8X1FE-TX-V2	8-port 10/100 Ethernet SPA TX	S
SPA-8XCHT1E1	8-Port Channelized T1/E1 SPA	S
SPA-OC192POS-LR	1-port OC-192c/STM-64 POS/RPR SPA, SM-LR	S
SPA-OC192POS-XFP	1-port OC-192c/STM-64 POS/RPR SPA, XFP Optics	S
WS-6700-DFC3B	Catalyst 6500 Distributed forwarding card 3B	S
WS-6700-DFC3BXL	Catalyst 6500 Distributed forwarding card 3B XL	S
WS-C6509-E-FAN	High-capacity fan tray	S
WS-C6509-NEB-A	Enhanced 9-slot vertically oriented chassis	S
WS-CAC-6000W	6000W AC power supply	S

Table 127 Supported Modules for Cisco Catalyst 6500 Series (IOS) Switches (continued)

Module Name	Module Description	Certification Level
WS-F6700-DFC3BXL	Distributed Forwarding Card 3BXL (DFC3BXL) for use on CEF720 modules	S
WS-F6700-DFC3C	Distributed Forwarding Card 3C (DFC3C) for use on CEF720 modules	S
WS-F6700-DFC3CXL	Distributed Forwarding Card 3CXL (DFC3CXL) for use on CEF720 modules	S
WS-F6K-FE48X2-AF	IEEE 802.3af PoE daughtercard	S
WS-F6K-GE48-AF	IEEE 802.3af PoE daughtercard	S
WS-F6K-MSFC2	Multilevel Switching Feature Card Version 2 for Catalyst 6000 that is treated as a standalone system by the NMS	S
WS-F6K-PFC2	Catalyst 6500 L3 switching engine II	S
WS-F6K-PFC3BXL	Policy Feature Card 3BXL (PFC3BXL)	V
WS-F6K-PFC3CXL	Policy Feature Card 3CXL (PFC3CXL)	S
WS-F6K-VPWR	PoE Daughtercard	S
WS-F6K-VPWR-GE	PoE Daughtercard	S
WS-G6483	10GBASE-ER serial 1550 nm extended-reach OIM	S
WS-G6488	10GBASE-LR serial 1310 nm long-reach OIM	S
WS-SUP32-10GE-3B	Supervisor Engine 32	S
WS-SUP32-GE-3B	Supervisor Engine 32	S
WS-SUP720-3B	Supervisor Engine 720 with PFC3B	V
WS-SUP720-3BXL	Supervisor Engine 720 with PFC3BXL	V
WS-SVC-IDS2-BUN-K9	Cisco Catalyst 6500 Series Intrusion Detection System (IDSM-2) Service Module	S
WS-SVC-MWAM-1	Multi-Processor WAN Application Module	S
WS-SVC-NAM-1	Network Analysis module 1	S
WS-SVC-NAM-2	Network Analysis module 2	S
WS-X6148A-GE-TX	48 port 10/100/1000 RJ-45 Ethernet Switching Module	S
WS-X6148A-RJ-45	48 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S
WS-X6148-FE-SFP	48 port 100BASE-FX Fast Ethernet Switching Module	S
WS-X6148-GE-TX	48 port 10/100/1000 RJ-45 Ethernet Switching Module	S
WS-X6148-RJ-21	48 port 10/100TX RJ-21 Ethernet/Fast Ethernet Switching Module	S

Table 127 Supported Modules for Cisco Catalyst 6500 Series (IOS) Switches (continued)

Module Name	Module Description	Certification Level
WS-X6148-RJ-45	48 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S
WS-X6148X2-RJ-45	96 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S
WS-X6196-RJ-21	96 port 10/100TX RJ-21 Ethernet/Fast Ethernet Switching Module	S
WS-X6248A-TEL	48 port 10/100TX RJ-21 Enhanced Ethernet/Fast Ethernet Switching Module	S
WS-X6248-RJ-45	48 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S
WS-X6248-TEL	48 port 10/100TX RJ-21 Ethernet/Fast Ethernet Switching Module	S
WS-X6316-GE-TX	16-port Gigabit Ethernet RJ-45	S
WS-X6324-100FX-SM	24 port 100FX SingleMode Fast Ethernet Switching Module	S
WS-X6348-RJ-21	6500 48 port 10/100BaseTX (RJ-21)	S
WS-X6348-RJ-45	48 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S
WS-X6408A-GBIC	8-port Gigabit Ethernet GBIC Enhanced QoS Module	S
WS-X6408-GBIC	8-port Gigabit Ethernet GBIC	S
WS-X6416-GBIC	16-port Gigabit Ethernet GBIC	S
WS-X6502-10GE	1-port 10-Gigabit Ethernet	S
WS-X6516A-GBIC	16-port Gigabit Ethernet GBIC	S
WS-X6516-GBIC	16-port Gigabit Ethernet GBIC	S
WS-X6516-GE-TX	16 port 10/100/1000 Base-T Ethernet Switching Module	S
WS-X6548-GE-TX	48 port 10/100/1000 RJ-45 Ethernet Switching Module	S
WS-X6548-RJ-21	48 port 10/100TX RJ-21 Ethernet/Fast Ethernet Switching Module	S
WS-X6548-RJ-45	48 port 10/100TX RJ-45 Ethernet/Fast Ethernet Switching Module	S
WS-X6582-2PA	Enhanced FlexWAN Module;	S
WS-X6700-CFC	Centralized Forwarding Card	S
WS-X6704-10GE	4-port 10-Gigabit Ethernet	S
WS-X6724-SFP	24-port Gigabit Ethernet SFP	S
WS-X6748-GE-TX	48 port 10/100/1000 RJ-45 Ethernet Switching Module	S

Table 127 Supported Modules for Cisco Catalyst 6500 Series (IOS) Switches (continued)

Module Name	Module Description	Certification Level
WS-X6748-SFP	48-port Gigabit Ethernet SFP	S
WS-X6816-GBIC	16-port Gigabit Ethernet GBIC	S
WS-X6K-S1A-MSFC2	Catalyst 6000 Supervisor Engine 1A, 2 Gigabit Ethernet, plus MSFC2 and policy feature card (PFC)	S
WS-X6K-SUP2-2GE	Supervisor 2 with 2 Gigabit Ethernet ports	S
XENPAK-10GB-ER	10GBASE-ER Serial 1550-nm extended-reach, single-mode fiber (SMF), dispersion-shifted fiber (DSF)	S
XENPAK-10GB-SR	10GBASE-SR Serial 850-nm short-reach multimode fiber (MMF)	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco Catalyst 6500 Series (IOS)—Supported Technologies, page 173.

Cisco Catalyst 6500 Series (IOS)—Supported Technologies

The following technologies are supported by the Cisco Catalyst 6500 Series (IOS) in Cisco ANA 3.6 SP1:

Cisco Catalyst 6500 Series (IOS)—Supported Events

Table 128 lists the supported service events for Cisco Catalyst 6500 Series (IOS) switches in Cisco ANA 3.6 SP1.

Table 128 Service Events for Cisco Catalyst 6500 Series (IOS) Switches

Event Name	Expedited
Primary HSRP interface inactive/ active	N
Secondary HSRP interface inactive/active	N
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
Cloud Problem	N
Broken LSP discovered	N
MPLS Black hole	N
Layer 2 Tunnel Down	N
MPLS TE Tunnel Down/Flapping	N
BGP Neighbor Down	N
Card up/down	Y

Cisco Catalyst 6500 Series (CatOS) Switches

This section includes the following information about Cisco Catalyst 6500 Series (CatOS) switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco Catalyst 6500 Series (CatOS)—Supported Software Versions

Table 129 lists the supported software versions for Cisco Catalyst 6500 Series (CatOS) switches in Cisco ANA 3.6 SP1.

Table 129 Supported Software Versions for Cisco Catalyst 6500 Series (CatOS) Switches

Software Version	Certification Level
CatOS 6.4(10)	V
CatOS 7.6(1)	V

Cisco Catalyst 6500 Series (CatOS)—Supported Topologies

The following topologies are supported for Cisco Catalyst 6500 Series (CatOS) switches in Cisco ANA 3.6 SP1:

- IP
- MAC
- CDP

Cisco Catalyst 6500 Series (CatOS)—Supported Modules

Table 130 lists the supported modules for Cisco Catalyst 6500 Series (CatOS) switches in Cisco ANA 3.6 SP1.

Table 130 Supported Modules for Cisco Catalyst 6500 Series (CatOS) Switches

Module Name	Module Description	Certification Level
AIP	ATM Interface Processor	V
CAT6509	Catalyst 6500 Plus with 9 slots	V
CAT6K-MSFC	Multilevel Switching Feature Card for the Catalyst 6000 series	V
CAT6K-MSFC2	Multilevel Switching Feature Card Version 2 for the Catalyst 6000 series	V
CAT6K-WSF-6700-CFC	Catalyst 6500 centralized Forwarding Card	V
CAT6K-WSF-6K-DFC3A	Catalyst 6500 Distributed L3 switching engine IIIa	V
CAT6K-WSF-6K-PFC3A	Catalyst 6500 Centralized L3 switching engine IIIa	V
CAT6K-WSF-6K-VPWR-GE	Cat6k voice daughter cards	V
CAT6K-WS-SUP32-GE-3B	cat6k-ws-sup32-ge-3b	V
CAT6K-WS-SUP720	Catalyst 6500 Supervisor Module 720 CPU board	V
CAT6K-WS-SUP720-BASE	Catalyst 6500 Supervisor Module 720 base board	V
CAT6K-WS-SVC-IDSM2	Catalyst 6500 Intrusion Detection Module	V
CAT6K-WSX-6066-SLB-APC	Content Switching Module	V
CAT6K-WSX-6148-GE-TX	48-port-10-100-1000-MB-EtherModule	V
CAT6K-WSX-6148-RJ45	48 port10/100BaseTX(RJ-45) module	V
CAT6K-WSX-6248A-RJ45	Catalyst 6000 48-port 10/100BaseTX RJ-45	V
CAT6K-WSX-6248-RJ45	Catalyst 6000 Family 48-port 10/100 RJ-45 module	V
CAT6K-WSX-6348-RJ45	48-port 10/100 ethernet module	V
CAT6K-WSX-6416-GBIC	16-port GBIC Gigabit ethernet module	V
CAT6K-WSX-6515-GETX	Catalyst 6500 16 port 10/100/1000BaseT (RJ-45) module	V
CAT6K-WSX-6516A-GBIC	Catalyst 6500 16 port 1000BaseX (GBIC)	V
CAT6K-WSX-6516-GBIC	Catalyst 6500 16 port 1000BaseX GBIC	V
CAT6K-WSX-6524-MMMT	Catalyst 6500 24 port 100BaseX MM (MT-RJ) module	V
CAT6K-WSX-6548-GETX	Catalyst 6500 48 port 10/100/1000 (RJ-45)	V
CAT6K-WSX-6548-RJ21	Catalyst 6500 48 port 10/100BaseTX =RJ-21=	V

Table 130 Supported Modules for Cisco Catalyst 6500 Series (CatOS) Switches (continued)

Module Name	Module Description	Certification Level
CAT6K-WSX-6548-RJ45	48 port 10/100 Hydra2+/Hydra2V+	V
CAT6K-WSX-6704-10GE	Catalyst 6500 4 port 10 GE	V
CAT6K-WSX-6724-SFP	Catalyst 6500 24 port 1000Base FX (SFP GBIC)	V
CAT6K-WSX-6748-GETX	Catalyst 6500 48 port 10/100/1000 (RJ-45)	V
CAT6K-WSX-SUP1A-2GE	Catalyst 6500 2 port 1000BaseX Supervisor module (GBIC)	V
CAT6K-WSX-SUP2-2GE	Supervisor 2 with 2 Gigabit Ethernet ports	V
CATALYST 6500 FIREWALL MODULE	Catalyst 6500 Firewall Module	V
CEF720 48 PORT 1000MB SFP	Catalyst 6500 48 port 1000Base FX (SFP GBIC)	V
CISCO ME 6524 ETHERNET SWITCH	Cisco ME 6524 Ethernet Switch	V
FSIP	Fast Serial Interface processor	V
GSR-ALARM16	gsr-alarm16	V
HDV	High Density Voice module	V
MIP	MultiChanel Interface Processor	V
MSFC2A ROUTE ENGINE	MSFC2A Route Engine	V
OC192-POS-RPR1-SM-VSR-SPA	1 port OC-192c/STM-64 POS/RPR single mode very short reach Shared Port Adapter =SPA=	V
PA-1T3-PLUS	pa-1t3-plus	V
PA-2FEISL-TX	pa-2feisl-tx	V
PA-2T3-PLUS	pa-2t3-plus	V
PA-8CE1	pa-8ce1	V
PA-A4T	pa-a4t	V
PA-A8T-V35	pa-a8t-v35	V
PA-AH1T	pa-ah1t	V
PA-AH2T	pa-ah2t	V
PA-ATMDX-DS3	pa-atmdx-ds3	V
PA-ATMDX-E3	pa-atmdx-e3	V
PA-ATMDX-MM-OC3	pa-atmdx-mm-oc3	V
PA-ATMDX-SMI-OC3	pa-atmdx-smi-oc3	V
PA-ATMDX-SML-OC3	pa-atmdx-sml-oc3	V
PA-CE3	pa-ce3	V
PA-POSSW-LR	pa-possw-lr	V
PA-POSSW-MM	pa-possw-mm	V
PA-POSSW-SM	pa-possw-sm	V

Table 130 Supported Modules for Cisco Catalyst 6500 Series (CatOS) Switches (continued)

Module Name	Module Description	Certification Level
PM-1FE-1T1	pm-1fe-1t1	V
POLICY FEATURE CARD 3	Policy Feature Card 3	V
POS-OC12-MM	pos-oc12-mm	V
RP	ROMmon Recovery Procedure	V
SPA-10X1GE	10-port Gigabit Ethernet SPA, SFP Optics	S
SPA-1XTENGE-XFP	1-port 10 Gigabit Ethernet SPA, LANPHY XFP Optics	S
SPA-2XOC3-ATM	2-port OC-3c/STM-1c ATM SPA	S
SPA-2XOC48POS/RPR	1-port 10 Gigabit Ethernet Shared Port Adapter XFP based	S
SPA-4XOC3-ATM	4-port OC-3c/STM-1c ATM SPA	S
TRIP	trip	V
VPN MODULE	VPN Module	V
VPN MODULE SUPPORTING 3DES	VPN Module supporting 3DES	V
WS-C6500-SFM	Switch Fabric Module	V
WS-C6509-NEB-A	Enhanced 9-slot vertically oriented chassis	S
WS-F6K-PWR(INLINE POWER CARD)	CATALYST 6000 INLINE POWER CARD, REF	V
WS-SUP720-3BXL	Catalyst 6500/Cisco 7600 Supervisor 720 Fabric MSFC3 PFC3BXL	V
WS-SVC-ADM-1-K9=	Catalyst 6500 Cisco Anomaly Detection Module	V
WS-SVC-AGM-1-K9=	Catalyst 6500 Cisco Anomaly Guard Module	V
WS-SVC-IDS2-BUN-K9	Cisco Catalyst 6500 Series Intrusion Detection System (IDSM-2) Service Module	S
WS-SVC-SSL-1-K9=	SSL Module for Catalyst 6500	V
WS-X6148-FE-SFP	Cisco Catalyst 6500 48-port 100BASE-X SFP Module	V
WSX-6408A-GBIC	Catalyst 6000 8-port Gigabit Ethernet Module	V
WSX-6408-GBIC	Card with 8 Gigabit Ethernet ports for the Catalyst 6000 series	V
WS-X6500-SFM2	Switch Fabric Module 2	V
WVIC-2DSU-T1(V2)	wvic-2dsu-t1(V2)	V

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco Catalyst 6500 Series (CatOS)—Supported Technologies, page 179.

Cisco Catalyst 6500 Series (CatOS)—Supported Technologies

The following technologies are supported by the Cisco Catalyst 6500 Series (CatOS) in Cisco ANA 3.6 SP1:

Cisco Catalyst 6500 Series (CatOS)—Supported Service Events

Table 131 lists the supported service events for Cisco Catalyst 6500 Series (CatOS) switches in Cisco ANA 3.6 SP1.

Table 131 Service Events for Cisco Catalyst 6500 Series (CatOS) Switches

Event Name	Expedited
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Cloud Problem	N
Card up/down	Y

Cisco ME 6500 Series Ethernet Switches

This section includes the following information about Cisco ME 6500 Series switches:

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Cisco Switches in Cisco ANA 3.6 SP1.

Cisco ME 6500 Series—Supported Software Versions

Table 132 lists the supported software versions for Cisco ME 6500 Series switches in Cisco ANA 3.6 SP1.

Table 132 Supported Software Versions for Cisco ME 6500 Series Switches

Software Version	Certification Level
12.2(18)ZU	S
12.2(18)ZU1	S
12.2(18)ZU2	S
12.2*	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Cisco ME 6500 Series—Supported Topologies

The following topologies are supported for Cisco ME 6500 Series switches in Cisco ANA 3.6 SP1:

- MAC
- CDP
- MPLS

Cisco ME 6500 Series—Supported Modules

Table 133 lists the supported modules for Cisco ME 6500 Series switches in Cisco ANA 3.6 SP1.

Table 133 Supported Modules for Cisco ME 6500 Series Switches

Module Name	Module Description	Certification Level
ME-C6524GS-8S	24 Gigabit Ethernet SFP interfaces + 8 Gigabit Ethernet SFP uplinks, 1 fan tray	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Cisco ME 6500 Series—Supported Technologies, page 181.

Cisco ME 6500 Series—Supported Technologies

The following technologies are supported by the Cisco ME 6500 Series in Cisco ANA 3.6 SP1:

Cisco ME 6500 Series—Supported Events

Table 134 lists the supported service events for Cisco ME 6500 Series switches in Cisco ANA 3.6 SP1.

Table 134 Service Events for Cisco ME 6500 Series Switches

Event Name	Expedited
Primary HSRP interface is not active Primary HSRP interface is active	N
Secondary HSRP interface is active Secondary HSRP interface is not active	N

Table 134 Service Events for Cisco ME 6500 Series Switches (continued)

Event Name	Expedited
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
Cloud Problem	N
Broken LSP discovered	N
MPLS Black hole	N
Layer 2 Tunnel Down	N
MPLS TE Tunnel Down/Flapping	N
BGP Neighbor Down	N
Card up/down	Y

Supported Technologies on Cisco Switches

The following sections list the objects and attributes that are supported on Cisco switches in Cisco ANA 3.6 SP1 per technology:

Note For more information about the objects and attributes described in this chapter, see *Cisco Active Network Abstraction Technology Support and Information Model Reference Manual, Version 3.6, Service Pack 1.*

Base Logical Components

Table 135 summarizes base logical component support on Cisco switches in Cisco ANA 3.6 SP1.

Table 135 Base Logical Component Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Managed Element Object (IMO Name—IManagedElement)													
IP Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Communication State	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Investigation State	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Element Category	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Element Type and Key	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Device Name	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
System Name	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
System Description	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Up Time	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Software Version	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Vendor Identity	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y
Memory and CPU Usage	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Agent Memory	Y	Y	Y		Y	Y	Y		Y	Y	Y	Y	
Number of Device Components													
Number of Logical Entries													

Layer 1

Table 136 summarizes Layer 1 attribute support on Cisco switches in Cisco ANA 3.6 SP1.

Table 136 Layer 1 Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Physical Layer Object (IMO Name—IPhysicalLayer)													
Media Type	Y	Y	Y	Y	Y	Y	Y		Y		Y	Y	Y
Clocking Source											Y		Y
Maximum Speed	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Is Internal Port	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	
Maximum and Minimum Discarded Thresholds	Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	
Discarded Bandwidth													
Maximum and Minimum Dropped Thresholds	Y							Y		Y	Y	Y	
Dropped Bandwidth													
Maximum and Minimum Input Threshold	Y							Y		Y	Y	Y	
Input Bandwidth													
Maximum and Minimum Output Thresholds	Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	
Output Bandwidth													
Discarded and Received Input Data Counters	Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
Dropped and Forward Output Data Counters	Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
Administrative Status	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Operational Status	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Last Changed	Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	Y
IANA Type	Y		Y		Y	Y	Y		Y		Y	Y	Y

IP

Table 137 summarizes IP attribute support on Cisco switches in Cisco ANA 3.6 SP1.

Table 137 IP Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
IP Interface Object (IMO Name—IIPInterface)													
IP Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Subnetwork Mask	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
IP Interface Addresses	Y										Y	Y	Y
Interface Name	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Interface Description								Y			Y		Y
IP Interface State	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
OSPF Interface Cost											Y		
Broadcast Address								Y			Y		
MTU											Y		Y
Lookup Method													
Address Resolution Type													
ARP Timeout													
Secured ARP													
ICMP Mask Reply													
IGMP Proxy													
HSRP Groups											Y		
IP Multiplexing Table													
IANA Type								Y					
Routing Entry Object (IMO Name—IRoutingEntry)													
Destination IP Subnet	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Next Hop IP Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Type	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Routing Protocol Type	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Outgoing Interface Name	Y	Y	Y	Y	Y	Y	Y		Y		Y	Y	Y
ARP Entry Object (IMO Name—IARPEntry)													
IP Address	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y
MAC Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Port	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y
Entry Type								Y			Y		Y
HSRP Group Entry Object (IMO Name—HSRPGroupEntry)													

Table 137 IP Attribute Support on Cisco Switches (continued)

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Group Number											Y		Y
Port Description											Y		
Priority											Y		Y
Coupled Router											Y		Y
State											Y		Y
Tracking Interfaces													
Virtual IP Address											Y		Y
Virtual MAC Address											Y		Y

Routing Protocols

Table 138 summarizes routing protocol attribute support on Cisco switches in Cisco ANA 3.6 SP1.

Table 138 Routing Protocol Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
BGP Neighbor Entry Object (IMO Name—IBgpNeighborEntry)													
Remote Identifier							Y				Y		Y
Neighbor Type							Y						
Distributing Interfaces							Y						
Remote Address							Y				Y		Y
Remote Autonomous System							Y				Y		Y
Status							Y				Y		Y
Hold Time							Y				Y		Y
Keep Alive Time							Y				Y		Y
OSPF Entry Object (IMO Name—IOspfEntry)													
Area Identifier											Y		Y
IP Address											Y		Y
Type											Y		Y
Administrative Status											Y		Y
Operational Status											Y		Y

Ethernet (Physical)

Table 139 summarizes support for physical Ethernet attributes on Cisco switches in Cisco ANA 3.6 SP1.

Table 139 Ethernet Physical Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Ethernet Channel Object (IMO Name—IEthernetChannel)													
Channel Group	Y	Y	Y		Y	Y	Y	Y	Y		Y	Y	Y
Channel Bandwidth	Y	Y										Y	
IANA Type	Y		Y	Y	Y	Y	Y	Y	Y		Y	Y	Y
Ethernet Interface Object (IMO Name—IEthernet)													
MAC Address	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Duplex Mode													
Output Flow Control													
Input Flow Control													
IANA Type				Y									

Physical Equipment

Table 140 summarizes physical equipment support on Cisco switches in Cisco ANA 3.6 SP1.

Table 140 Physical Equipment Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Module/Board Object (IMO Name—Imodule)													
Module Name	Y	Y	Y		Y	Y	Y		Y		Y	Y	Y
Module Description		Y	Y		Y	Y	Y		Y	Y	Y	Y	Y
Software Version	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Operational Status	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hardware Type & Version	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Managed IP Address													
Redundant Equipment													
Configured Redundancy													
Redundancy Status			Y		Y	Y	Y		Y		Y		
Operational Status Last Changed		Y	Y	Y	Y	Y	Y	Y	Y		Y		Y

Table 140 Physical Equipment Support on Cisco Switches (continued)

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Supported Physical Termination Points		Y							Y		Y		Y
Serial Number (soft property)	Y	Y		Y	Y	Y	Y	Y	Y		Y	Y	Y
Chassis Object (IMO Name—Ichassis)													
Equipment Holder Type		Y	Y		Y	Y	Y		Y		Y		Y
Description			Y		Y	Y	Y	Y	Y			Y	
Serial Number	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y

Ethernet (Logical)

Table 141 summarizes support for logical Ethernet attributes on Cisco switches in Cisco ANA 3.6 SP1.

Table 141 Ethernet Logical Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
VLAN Encapsulation Object (IMO Name—IIEEE802)													
VLAN Identification		Y	Y	Y	Y	Y	Y		Y		Y	Y	Y
Binding Information													
Binding Status													
IANA Type			Y		Y	Y	Y		Y		Y	Y	
Bridging Entry Object (IMO Name—IBridgeEntry)													
Destination MAC Address	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y
Outgoing Interface		Y	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y

ATM

Table 142 summarizes support for Asynchronous Transfer Mode (ATM) attributes on Cisco switches in Cisco ANA 3.6 SP1.

Table 142 ATM Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
ATM Interface Object (IMO Name—IAtm)													
ATM Address													
Interface Type													
VP and VC Ranges													
VC Table											Y		
Cross-Connect Table													
IANA Type											Y		
ATM VC Object (IMO Name—IAtmVc)													
Virtual Channel Identifier											Y		
Virtual Path Identifier											Y		
Shaping Profile													
Discarded and Received Input Data Counters											Y		
Dropped and Forward Output Data Counters											Y		
Ingress Traffic Descriptor											Y		
Egress Traffic Descriptor											Y		
Administrative Status											Y		
Operational Status											Y		
IANA Type													
Virtual Connection Encapsulation Object (IMO Name—IVcBasedEncapsulation)													
Virtual Connection Interface													
Binding Information													
Binding Status											Y		
IANA Type											Y		
ATM Traffic Descriptor Object (IMO Name—IAtmTrafficDescriptor)													
Traffic Descriptor Type											Y		
Service Category											Y		
Cell Loss Priority											Y		
Cell Delay Variation													
Cell Delay Variation Tolerance											Y		

Table 142 ATM Attribute Support on Cisco Switches (continued)

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Maximum High Priority and Aggregate Burst Rates											Y		
Minimum High Priority and Aggregate Cell Rates											Y		
Sustainable High Priority and Aggregate Cell Rates											Y		
Peak High Priority and Aggregate Cell Rates											Y		
Name													
Index													
ATM Access Traffic Descriptor Object (IMO Name—IAtmAccessTrafficDescriptor)													
Scope													
Maximum Active VPCs and VCCs													
Maximum Supported VPI and VCI Bits													
Generic Flow Control Mode													
Police Mode													
Name													
Index													
ATM Logical Interface Object (IMO Name—IAtmLogicalPort/Trunk)													
Same as ATM interface													

HDLC

Table 143 summarizes support for High-Level Data Link Control (HDLC) attributes on Cisco switches in Cisco ANA 3.6 SP1.

Table 143 HDLC Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
High Level Data Link Control Encapsulation Object (IMO Name—IEncapsulation)													
Virtual Connection Interface												Y	
Binding Information													

Table 143 HDLC Attribute Support on Cisco Switches (continued)

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Binding Status												Y	
IANA Type												Y	

MPLS

Table 144 summarizes support for Multiprotocol Label Switching (MPLS) attributes on Cisco switches in Cisco ANA 3.6 SP1.

Table 144 MPLS Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
MPLS Interface Object (IMO Name—IMpls)													
Distribution Protocol							Y				Y		Y
Outer and Inner Labels													Y
Traffic Engineering Properties							Y				Y		Y
Resource Reservation Properties													
IANA Type											Y		
MPLS TE Tunnel Interface Object (IMO Name—IMplsTETunnel)													
Destination Address							Y				Y		Y
Outgoing Interface and Label							Y				Y		Y
Path Identification							Y				Y		Y
Requested Bandwidth							Y				Y		Y
Measured Average Burst and Peak Bandwidth							Y				Y		Y
Setup and Hold Priority							Y				Y		Y
Affinity Bits and Mask							Y				Y		Y
Automatic Route Announcement Status							Y				Y		Y
Optimization Lock Down Status							Y				Y		Y
Path Option							Y				Y		Y
Name							Y				Y		Y
Description							Y				Y		Y
Administrative Status							Y				Y		Y
Operational Status							Y				Y		Y

Table 144 MPLS Attribute Support on Cisco Switches (continued)

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
IANA Type							Y				Y		
Point-to-Point Layer 2 MPLS Tunnel Interface Object (IMO Name—IPTPLayer2MplsTunnel)													
Local and Remote Router Addresses							Y				Y		Y
Local and Remote Virtual Connection Labels							Y				Y		Y
Tunnel Identification							Y				Y		Y
Tunnel Status							Y				Y		Y
Local and Remote Tunnel Interface													
IANA Type							Y				Y		
MPLS TE Object (IMO Name—IMplsTEProperties)													
Administrative Weight							Y				Y		Y
Attributes Identifier													
Signaling Protocol							Y				Y		Y
Available Physical and Reservable Bandwidth							Y				Y		Y
Reserved Bandwidth							Y				Y		Y
MPLS TE Allocation Entry Object (IMO Name—IMplsTEPropertiesAllocationEntry)													
Priority Level							Y						
Allocated and Cumulative Bandwidth							Y						
RSVP Properties Object (IMO Name—IRsvpProperties)													
Allocated Bandwidth													
Maximum Per Flow and Total Allowed Bandwidth													
LSE Entry Object (IMO Name—ILSEEntry)													
Incoming Label							Y				Y		Y
Outgoing Interface and Label							Y				Y		Y
Switching Action							Y				Y		Y
Next Hop IP Address							Y				Y		Y
MPLS Aggregate Entry Object (IMO Name—IMplsAggregateEntry)													
Virtual Routing Entity							Y				Y		Y
Incoming Label							Y				Y		Y
Outgoing Interface and Label							Y				Y		Y
Switching Action							Y				Y		Y

Table 144 MPLS Attribute Support on Cisco Switches (continued)

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Next Hop IP Address							Y				Y		Y
MPLS TE Tunnel Segment Object (IMO Name—IMplsTESegment)													
Segment Type							Y				Y		Y
Measured Average Burst and Peak Bandwidth							Y				Y		Y
Path Identification							Y				Y		Y
Name							Y				Y		Y

VPN

Table 145 summarizes support for virtual private network (VPN) attributes on Cisco switches in Cisco ANA 3.6 SP1.

Table 145 VPN Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
VRF Entity Object (IMO Name—IVrf)													
Name											Y		Y
Route Distinguisher											Y		Y
Virtual Routing Entry Object (IMO Name—IVrfEntry)													
Next Hop BGP Address											Y		Y
Incoming and Outgoing Inner Label											Y		Y
Outer Label											Y		Y
Destination IP Subnet											Y		Y
Next Hop IP Address											Y		Y
Type											Y		Y
Routing Protocol Type											Y		Y
Outgoing Interface Name											Y		Y
Multi-Protocol BGP Entity Object (IMO Name—IMpBgp)													
BGP Identifier							Y				Y		Y
Local Autonomous System							Y				Y		Y
Cross Virtual Routing Object (IMO Name—ICrossVrfRoutingEntry)													

Table 145 VPN Attribute Support on Cisco Switches (continued)

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Outgoing Virtual Routing Entity Identifier													
Incoming and Outgoing Virtual Routing Tags													Y
Destination IP Subnet											Y		Y
Next Hop IP Address											Y		Y
Type											Y		Y
Routing Protocol Type											Y		Y
Outgoing Interface Name													

ACL

Table 146 summarizes support for access list (ACL) attributes on Cisco switches in Cisco ANA 3.6 SP1.

Table 146 ACL Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Access List Entry Object (IMO Name—IAccessListEntry)													
Entry Identification											Y		
Action Logic											Y		
Source and Destination Address											Y		
Source and Destination Wildcard											Y		
Protocol Type											Y		
Source and Destination Port Ranges											Y		
Source and Destination Port Action											Y		
Protocol Specific Info											Y		
Differential Services Code Points											Y		
Type of Service											Y		
Precedence											Y		
Matches											Y		

Q-in-Q (Switch Port)

Table 147 summarizes support for Q-in-Q (also known as stacked VLAN) switch port attributes on Cisco switches in Cisco ANA 3.6 SP1.

Table 147 Q-in-Q Switch Port Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
VLAN Interface Object (IMO Name—IVlanInterface)													
Mode		Y		Y	Y	Y	Y			Y	Y	Y	Y
Native Identification		Y		Y	Y	Y	Y			Y	Y	Y	Y
Customer Edge Identification													
Service Provider Identification													
VLAN Table													
IANA Type												Y	
VLAN Entry Object (IMO Name—IVlanEntry)													
Identification					Y	Y	Y				Y	Y	
Encapsulation Type					Y	Y	Y				Y	Y	

Q-in-Q (Routed Switch)

Table 148 summarizes support for Q-in-Q (also known as stacked VLAN) routed switch attributes on Cisco switches in Cisco ANA 3.6 SP1.

Table 148 Q-in-Q Routed Switch Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
VLAN Multiplexer Object (IMO Name—IVlanEncapMux)													
IANA Type					Y	Y	Y				Y	Y	
VLAN Encapsulation Object (IMO Name—IEEE802)													
VLAN Identification													
Binding Information													
Binding Status													
IANA Type					Y	Y	Y				Y	Y	

STP

Table 149 summarizes support for Spanning Tree Protocol (STP) attributes on Cisco switches in Cisco ANA 3.6 SP1.

Table 149 STP Attribute Support on Cisco Switches

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
STP Service Object (IMO Name—IStpService)													
Protocol Type	Y			Y						Y		Y	
Current and Bridge	Y			Y	Y		Y	Y	Y	Y	Y	Y	
Current and Bridge Hello Time	Y			Y	Y		Y	Y	Y	Y	Y	Y	
Current and Bridge Forward Delay	Y			Y	Y		Y	Y	Y	Y	Y	Y	
Bridge Information Table	Y			Y	Y		Y	Y	Y		Y	Y	
MST Service Object (IMO Name—IMstService)													
Protocol Properties				Y					Y			Y	
Same as IStpService				Y					Y			Y	
MST Properties Object (IMO Name—ImstProperties)													
Force Version	Y			Y	Y		Y	Y	Y	Y	Y	Y	
Configuration Format, Region Name and Revision Level	Y			Y	Y		Y	Y	Y	Y	Y	Y	
External Root Cost													
Maximum Instances													
STP Instance Information Object (IMO Name—IStpInstanceInfo)													
Object Identification		Y								Y			Y
Identification													
Priority		Y								Y			Y
Designated Parent and Root Bridges	Y			Y	Y		Y	Y	Y		Y	Y	
Root Cost	Y	Y		Y	Y		Y	Y	Y	Y	Y	Y	Y
Is Root	Y	Y		Y	Y		Y	Y	Y	Y	Y	Y	Y
Root Port Identification	Y			Y	Y		Y	Y	Y		Y	Y	
Port Information Table	Y	Y		Y				Y	Y	Y		Y	Y
MST Protocol Instance Information Object (IMO Name—IMstInstanceInfo)													
Instance Identification	Y			Y	Y		Y	Y	Y		Y	Y	
same as IStpBridgeInfo	Y			Y	Y		Y	Y	Y		Y	Y	
Per VLAN Spanning Tree Protocol Instance Information Object (IMO Name—IPvstpInstanceInfo)													
Protocol Type	Y	Y		Y	Y		Y	Y	Y	Y	Y	Y	Y

Table 149 STP Attribute Support on Cisco Switches (continued)

Attribute	2900	ME 3400	3500 XL	3550	3560	3750	ME 3750	4000	4500	ME 4900	6500 IOS	6500 CatOS	ME 6524
Current and Bridge Maximum Age	Y	Y		Y	Y		Y	Y	Y	Y	Y	Y	Y
Current and Bridge Hello Time	Y			Y	Y		Y	Y	Y		Y	Y	
Current and Bridge Forward Delay	Y			Y	Y		Y	Y	Y		Y	Y	
same as IStpInstanceInfo	Y			Y			Y		Y		Y	Y	
RSTP Instance Information Object (IRstpInstanceInfo)													
Force Version	Y			Y	Y		Y	Y	Y		Y	Y	
same as IStpInstanceInfo				Y			Y		Y		Y		

Support Information for Juniper Devices

This chapter contains the Virtual Network Element (VNE) device support information in Cisco ANA 3.6 SP1 for the following devices:

- Juniper M-Series Routers, page 199

For information about the technologies supported by each of these VNEs, see Supported Technologies on Juniper Devices, page 203.

Juniper M-Series Routers

This section includes the following information about Juniper M-Series routers:

- Juniper M-Series—Supported Software Versions, page 199
- Juniper M-Series—Supported Topologies, page 200
- Juniper M-Series—Supported Modules, page 200
- Juniper M-Series—Supported Technologies, page 201
- Juniper M-Series—Supported Service Events, page 202

Note For information about which NE types are supported in Cisco ANA 3.6 SP1, see Supported Juniper Devices in Cisco ANA 3.6 SP1.

Juniper M-Series—Supported Software Versions

Table 150 lists the supported software versions for Juniper M-Series routers in Cisco ANA 3.6 SP1.

Table 150 Supported Software Versions for Juniper M-Series Routers

Software Version	Certification Level
7.4R1.7	S
7.6	S
7.4R1.7	S
7.1 R2.2	S

Table 150 Supported Software Versions for Juniper M-Series Routers (continued)

Software Version	Certification Level
7.4R3.3	S
8.1R2.4	S
7.4R3.3	S
8.1R2.4	S
7.6	S
7.4R3.3	S
8.1R2.4	S
8.4R1.13	S
8.1R4.3	S
7.4R4.3	S

Note Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6 SP1. Specific software versions that have been tested and verified are listed individually and marked as V.

Juniper M-Series—Supported Topologies

The following topologies are supported for Juniper M-Series routers in Cisco ANA 3.6 SP1:

- IP
- MAC

Juniper M-Series—Supported Modules

Table 151 lists the supported modules for Juniper M-Series routers in Cisco ANA 3.6 SP1.

Table 151 Supported Modules for Juniper M-Series Routers

Module Name	Module Description	Certification Level
PEM	AC/DC Power Supply	S
Top Fan	Fan Module	S
FPC: M320 FPC Type 1	Flexible PIC Concentrators	S
PIC: Adaptive Services-II	Physical Interface Card	S
PIC: 1x STM-16 SDH, SMSR	1 Port STM16 PIC with SFP	S
PIC: 1x 10GE(LAN/WAN) IQ2	1Port 10-Gigabit Ethernet IQ2 PIC with XFP	S
Routing Engine 0	Routing Engine	S

Table 151 Supported Modules for Juniper M-Series Routers (continued)

Module Name	Module Description	Certification Level
FPM GBUS	Fuse Module	S
CB	Control Board	S
CIP	Connector Interface Pannel	S
SIB	Switch Interface Board	S
PIC: 1x CHSTM1 IQ SDH, SMIR	1 Port Channelized STM1 IQ PIC	S
PIC: 10x CHE1 IQ	10 Port Channelized E1 IQ PIC	S
PIC: 1x OC-48 SONET SFP	1 Port SONET/SDH OC48c/STM16 PIC with SFP	S
PIC: 1x Tunnel	Tunnel Services PIC	S
PIC: 1x OC-12 SONET, SMIR	1 Port SONET/SDH OC12c/STM4 PIC	S
PIC: 1x G/E, 1000 BASE	1 Port Gigabit Ethernet PIC with SFP	S
PIC: 4x E3 IQ	4 Port E3 IQ PIC	S
PIC: 1x G/E IQ, 1000 BASE	1 Port Gigabit Ethernet IQ PIC with SFP	S
PIC: 4x STM-1 SDH, SMIR	4 Port SONET/SDH OC3c/STM1 PIC	S
PIC: 4x CHDS3 IQ	4 Port Channelized DS3 IQ PIC	S
PIC: 4x F/E, 100 BASE-TX	4 100Base-TX ports Fast Ethernet PICs	S
PIC: 1x G/E, 1000 BASE-SX	1 Port Gigabit Ethernet IQ PIC with SFP	S
PIC: 2x T3	2 Port T3 PIC	S
CFEB Internet Processor II	Fuse Module	S
M10i Midplane	M10i Midplane	S
M320Midplane	M320 Midplane	S
PIC: 1x STM-4 SDH, MM	1 Port SONET/SDH OC12c/STM4 PIC	S
PIC: 4x STM-4 SDH, SMIR	4 Port SONET/SDH OC12c/STM4 PIC	S
PIC: 2x OC-3 ATM-II IQ, SMIR	2 Port ATM2 OC3/STM1 IQ PIC	S
M10i HCM	M10i High-Availability Chassis Manager	S

Note For detailed information about the specific technologies and attributes supported by this NE, see Juniper M-Series—Supported Technologies, page 201.

Juniper M-Series—Supported Technologies

The following technologies are supported by the Juniper M-Series in Cisco ANA 3.6 SP1:

Juniper M-Series—Supported Service Events

Table 152 lists the supported service events (also called service alarms) for Juniper M-Series routers in Cisco ANA 3.6 SP1.

Table 152 Service Events for Juniper M-Series Routers

Event Name	Expedited
All ip interfaces down active ip interfaces found	Y
interface status down/up	Y
card in/out	Y
link down/up	Y
Device Unreachable	N
CPU Over Utilized	N
Memory Over utilize	N
Device Unsupported	N
Discard Packets	N
Dropped Packets	N
Module Unsupported	N
Port Flapping	N
Port Down	Y
Rx Over utilized	N
Tx Over utilized	N
VPN leak	N
BGP Neighbor Down	N
Card up/down	Y

Supported Technologies on Juniper Devices

The following sections list the objects and attributes that are supported on Juniper devices in Cisco ANA 3.6 SP1 per technology:

Note For more information about the objects and attributes described in this chapter, see *Cisco Active Network Abstraction Technology Support and Information Model Reference Manual, Version 3.6 Service Pack 1.*

Base Logical Components

Table 153 summarizes base logical component support on Juniper devices in Cisco ANA 3.6 SP1.

Table 153 Base Logical Component Support on Juniper Devices

Attribute	M-Series
Managed Element Object (IMO Name—IManagedElement)	
IP Address	Y
Communication State	Y
Investigation State	Y
Element Category	Y
Element Type and Key	Y
Device Name	Y
System Name	Y
System Description	Y
Up Time	Y

Table 153 Base Logical Component Support on Juniper Devices (continued)

Attribute	M-Series
Software Version	Y
Vendor Identity	Y
Memory and CPU Usage	Y
Agent Memory	
Number of Device Components	
Number of Logical Entries	

Layer 1

Table 154 summarizes Layer 1 attribute support on Juniper devices in Cisco ANA 3.6 SP1.

Table 154 Layer 1 Attribute Support on Juniper Devices

Attribute	M-Series
Physical Layer Object (IMO Name—IPhysicalLayer)	
Media Type	Y
Clocking Source	Y
Maximum Speed	Y
Is Internal Port	Y
Maximum and Minimum Discarded Thresholds	Y
Discarded Bandwidth	
Maximum and Minimum Dropped Thresholds	Y
Dropped Bandwidth	
Maximum and Minimum Input Threshold	Y
Input Bandwidth	
Maximum and Minimum Output Thresholds	Y
Output Bandwidth	
Discarded and Received Input Data Counters	Y
Dropped and Forward Output Data Counters	Y

Table 154 Layer 1 Attribute Support on Juniper Devices (continued)

Attribute	M-Series
Administrative Status	Y
Operational Status	Y
Operational Status Date	Y
IANA Type	Y

IP

Table 155 summarizes IP attribute support on Juniper devices in Cisco ANA 3.6 SP1.

Table 155 IP Attribute Support on Juniper Devices

Attribute	M-Series
IP Interface Object (IMO Name—IIPInterface)	
IP Address	Y
Subnetwork Mask	Y
IP Interface Addresses	Y
Interface Name	Y
Interface Description	
IP Interface State	Y
OSPF Interface Cost	
Broadcast Address	
MTU	
Lookup Method	
Address Resolution Type	
ARP Timeout	
Secured ARP	
ICMP Mask Reply	
IGMP Proxy	
HSRP Groups	
IP Multiplexing Table	
IANA Type	
Routing Entry Object (IMO Name—IRoutingEntry)	
Destination IP Subnet	Y

Table 155 IP Attribute Support on Juniper Devices (continued)

Attribute	M-Series
Next Hop IP Address	Y
Type	Y
Routing Protocol Type	Y
Outgoing Interface Name	Y
ARP Entry Object (IMO Name—IARPEntry)	
IP Address	Y
MAC Address	Y
Port	Y
Entry Type	Y
HSRP Group Entry Object (IMO Name—HSRPGroupEntry)	
Group Number	
Port Description	
Priority	
Coupled Router	
State	
Tracking Interfaces	
Virtual IP Address	
Virtual MAC Address	

Routing Protocols

Table 156 summarizes routing protocol attribute support on Juniper devices in Cisco ANA 3.6 SP1.

Table 156 Routing Protocol Attribute Support on Juniper Devices

Attribute	M-Series
BGP Neighbor Entry Object (IMO Name—IBgpNeighborEntry)	
Identifier	Y
Neighbor Type	Y
Distributing Interfaces	
Remote Address	Y
Remote Autonomous System	Y
Status	Y

Table 156 Routing Protocol Attribute Support on Juniper Devices (continued)

Attribute	M-Series
Hold Time	Y
Keep Alive Time	Y
OSPF Entry Object (IMO Name—IOspfEntry)	
Area Identifier	Y
IP Address	Y
Type	Y
Administrative Status	Y
Operational Status	Y

Ethernet (Physical)

Table 157 summarizes support for physical Ethernet attributes on Juniper devices in Cisco ANA 3.6 SP1.

Table 157 Ethernet Physical Attribute Support on Juniper Devices

Attribute	M-Series
Ethernet Channel Object (IMO Name—IEthernetChannel)	
Channel Group	
Channel Bandwidth	
IANA Type	
Ethernet Interface Object (IMO Name—IEthernet)	
MAC Address	Y
Duplex Mode	
Output Flow Control	
Input Flow Control	
IANA Type	Y

Physical Equipment

Table 158 summarizes physical equipment support on Juniper devices in Cisco ANA 3.6 SP1.

Table 158 Physical Equipment Support on Juniper Devices

Attribute	M-Series
Module/Board Object (IMO Name—Imodule)	
Module Name	Y
Module Description	Y
Software Version	
Operational Status	Y
Hardware Type & Version	Y
Managed IP Address	
Redundant Equipment	
Configured Redundancy	
Redundancy Status	
Operational Status Last Changed	
Supported Physical Termination Points	
Serial Number (soft property)	Y
Chassis Object (IMO Name—Ichassis)	
Equipment Holder Type	Y
Description	
Serial Number	

Ethernet (Logical)

Table 159 summarizes support for logical Ethernet attributes on Juniper devices in Cisco ANA 3.6 SP1.

Table 159 Ethernet Logical Attribute Support on Juniper Devices

Attribute	M-Series
VLAN Encapsulation Object (IMO Name—IIEEE802)	
VLAN Identification	Y
Binding Information	
Binding Status	

Table 159 Ethernet Logical Attribute Support on Juniper Devices (continued)

Attribute	M-Series
IANA Type	Y
Bridging Entry Object (IMO Name—IBridgeEntry)	
Destination MAC Address	
Outgoing Interface	

ATM

Table 160 summarizes support for Asynchronous Transfer Mode (ATM) attributes on Juniper devices in Cisco ANA 3.6 SP1.

Table 160 ATM Attribute Support on Juniper Devices

Attribute	M-Series
ATM Interface Object (IMO Name—IAtm)	
ATM Address	
Interface Type	
VP and VC Ranges	
VC Table	Y
Cross-Connect Table	
IANA Type	Y
ATM VC Object (IMO Name—IAtmVc)	
Virtual Channel Identifier	Y
Virtual Path Identifier	Y
Shaping Profile	
Discarded and Received Input Data Counters	
Dropped and Forward Output Data Counters	
Ingress Traffic Descriptor	
Egress Traffic Descriptor	
Administrative Status	Y
Operational Status	Y
IANA Type	
Virtual Connection Encapsulation Object (IMO Name—IVcBasedEncapsulation)	

Table 160 ATM Attribute Support on Juniper Devices (continued)

Attribute	M-Series
Virtual Connection Interface	Y
Binding Information	
Binding Status	Y
IANA Type	Y
ATM Traffic Descriptor Object (IMO Name—IAtmTrafficDescriptor)	
Traffic Descriptor Type	
Service Category	
Cell Loss Priority	
Cell Delay Variation	
Cell Delay Variation Tolerance	
Maximum High Priority and Aggregate Burst Rates	
Minimum High Priority and Aggregate Cell Rates	
Sustainable High Priority and Aggregate Cell Rates	
Peak High Priority and Aggregate Cell Rates	
Name	
Index	
ATM Access Traffic Descriptor Object (IMO Name—IAtmAccessTrafficDescriptor)	
Scope	
Maximum Active VPCs and VCCs	
Maximum Supported VPI and VCI Bits	
Generic Flow Control Mode	
Police Mode	
Name	
Index	
ATM Logical Interface Object (IMO Name—IAtmLogicalPort/Trunk)	
Same as ATM interface	

Frame Relay

Table 161 summarizes support for Frame Relay attributes on Juniper devices in Cisco ANA 3.6 SP1.

Table 161 Frame Relay Attribute Support on Juniper Devices

Attribute	M-Series
Frame Relay Interface Object (IMO Name—Iframerelay/IFrTrunk)	
Address Format	
Maximum Supported VCs	
Protocol Type	Y
VC Table	Y
Cross-Connect Table	
IANA Type	
Frame Relay VC Object (IMO Name—IFrVc)	
Data Link Connection Identifier	Y
Traffic Descriptor	
Discard and Received Input Data Counters	
Dropped and Forward Output Data Counters	
Ingress Traffic Descriptor	
Egress Traffic Descriptor	
Administrative Status	Y
Operational Status	Y
IANA Type	
Frame Relay Traffic Descriptor Object (IMO Name—IFRTrafficDescriptor)	
Committed Rate	
Excess Burst Rate	
Name	
Index	
Frame Relay Logical Interface Object (IMO Name—IFramerelayLogicalPort/Trunk)	
Same as IFrameRelay	

HDLC

Table 162 summarizes support for High-Level Data Link Control (HDLC) attributes on Juniper devices in Cisco ANA 3.6 SP1.

Table 162 HDLC Attribute Support on Juniper Devices

Attribute	M-Series
High Level Data Link Control Encapsulation Object (IMO Name—IEncapsulation)	
Virtual Connection Interface	Y
Binding Information	
Binding Status	
IANA Type	

MPLS

Table 163 summarizes support for Multiprotocol Label Switching (MPLS) attributes on Juniper devices in Cisco ANA 3.6 SP1.

Table 163 MPLS Attribute Support on Juniper Devices

Attribute	M-Series
MPLS Interface Object (IMO Name—IMpls)	
Distribution Protocol	Y
Outer and Inner Labels	Y
Traffic Engineering Properties	
Resource Reservation Properties	
IANA Type	
MPLS TE Tunnel Interface Object (IMO Name—IMplsTETunnel)	
Destination Address	
Outgoing Interface and Label	
Path Identification	
Requested Bandwidth	
Measured Average Burst and Peak Bandwidth	
Setup and Hold Priority	
Affinity Bits and Mask	

Table 163 MPLS Attribute Support on Juniper Devices (continued)

Attribute	M-Series
Automatic Route Announcement Status	
Optimization Lock Down Status	
Path Option	
Name	
Description	
Administrative Status	
Operational Status	
IANA Type	
Point-to-Point Layer 2 MPLS Tunnel Interface Object (IMO Name—IPTPLayer2MplsTunnel)	
Local and Remote Router Addresses	
Local and Remote Virtual Connection Labels	
Tunnel Identification	
Tunnel Status	
Local and Remote Tunnel Interface	
IANA Type	
MPLS TE Object (IMO Name—IMplsTEProperties)	
Administrative Weight	
Attributes Identifier	
Signaling Protocol	
Available Physical and Reservable Bandwidth	
Reserved Bandwidth	
MPLS TE Allocation Entry Object (IMO Name—IMplsTEPropertiesAllocationEntry)	
Priority Level	
Allocated and Cumulative Bandwidth	
RSVP Properties Object (IMO Name—IRsvpProperties)	
Allocated Bandwidth	

Table 163 MPLS Attribute Support on Juniper Devices (continued)

Attribute	M-Series
Maximum Per Flow and Total Allowed Bandwidth	
LSE Entry Object (IMO Name—ILSEEntry)	
Incoming Label	Y
Outgoing Interface and Label	Y
Switching Action	Y
Next Hop IP Address	Y
MPLS Aggregate Entry Object (IMO Name—IMplsAggregateEntry)	
Virtual Routing Entity	Y
Incoming Label	Y
Outgoing Interface and Label	Y
Switching Action	Y
Next Hop IP Address	
MPLS TE Tunnel Segment Object (IMO Name—IMplsTESegment)	
Segment Type	
Measured Average Burst and Peak Bandwidth	
Path Identification	
Name	

VPN

Table 164 summarizes support for virtual private network (VPN) attributes on Juniper devices in Cisco ANA 3.6 SP1.

Table 164 VPN Attribute Support on Juniper Devices

Attribute	M-Series
VRF Entity Object (IMO Name—IVrf)	
Name	Y
Route Distinguisher	Y
Virtual Routing Entry Object (IMO Name—IVrfEntry)	
Next Hop BGP Address	Y

Table 164 VPN Attribute Support on Juniper Devices (continued)

Attribute	M-Series
Incoming and Outgoing Inner Label	Y
Outer Label	Y
Destination IP Subnet	Y
Next Hop IP Address	Y
Type	Y
Routing Protocol Type	Y
Outgoing Interface Name	Y
Multi-Protocol BGP Entity Object (IMO Name—IMpBgp)	
BGP Identifier	Y
Local Autonomous System	Y
Cross Virtual Routing Object (IMO Name—ICrossVrfRoutingEntry)	
Outgoing Virtual Routing Entity Identifier	
Incoming and Outgoing Virtual Routing Tags	
Destination IP Subnet	Y
Next Hop IP Address	Y
Type	Y
Routing Protocol Type	Y
Outgoing Interface Name	